

BOUNDARIES IN MOVEMENT:

Designing for an adaptable 21st-century multi-family residential landscape

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ABSTRACT

In our rapidly densifying urban environment, diversifying family types, and evolving urban demographics, it is of great value to reconsider ways to design residential landscapes that are adaptable to natural and cultural changes. This project interprets Gilles Clément's one approach—The Planetary Garden, and two theories—The Garden in Movement and The Third Landscape, to develop design strategies that create interconnected spaces with a gradient of scales and functions. These strategies were tested on Parkmerced, a multi-family residential community located in San Francisco, California, completed in 1951. Four proposed design elements create flexible boundaries, permeable surfaces, interconnected pathways, and dynamic vegetation that could easily be altered and accommodate for future change. Parkmerced is on the verge of a long-term redevelopment and this project proposes an alternative approach that would retrofit a 20th-century modernist landscape into a culturally and environmentally adaptable 21st-century urban residential landscape.

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I. INTRODUCTION

Where it all begins.

PROJECT STATEMENT

Biologists and landscape architects have written about and researched the innate connection between humans and nature, and the positive impact nature has had on human well-being (Tuan, 1977; Wilson, 1984). The relationship between humans and nature has evolved over time as humans transitioned from hunting and gathering in nature to a life of artificial comfort and ease as technologies have progressed. The introduction of advanced technology has unfortunately led to a disconnect between humans and our landscapes, which is especially apparent in urban landscapes. Nowadays, many feel as if they are “kept hostage” in urban environments and by our modern technologies and, in turn, are constantly fleeing to “nature” for refuge. This phenomenon reflects humans’ need for nature in order to sustain a healthy life both physically and mentally. Not only does technology increase the distance between humans and nature, it also provides us with the ability to intensively control our environment from the indoors to the outdoors. We have become acclimated to a stable life and have lost track of the perpetual natural and cultural forces that continue to shape our landscape.

California Modernist landscape architects provided one way to reunite people and the landscape by intentionally bridging the indoors and outdoors through their residential designs. This phenomenon has been documented in *Sunset Magazine* throughout the 1940s to 1970s. For example,

patios have become a pervasive element in the California residential landscape that extended the indoor living room into the garden. With California’s mild climate as a catalyst, the Modernist designers “saw house and garden as two parts of the same environment; no house without a garden could be called a home” (Treib, 2005). After all, “outdoors and indoors are inseparable; they are complementary and supplementary, two sides of the same door.” (Eckbo et. al., 2002)

I consider this as one step towards cultivating a positive relationship between humans and landscape. Although there have been many discussions about advancing urban green infrastructure such as stormwater facilities, green roofs, and green walls, there has yet to be an updated or improved approach to further engage with the outdoor lifestyle in residential landscapes. In our rapidly densifying urban environment, with an increasing number of multi-family homes and diversifying family types¹ and backgrounds, urban dwellers are constantly striving for a balance between privacy and publicness, individuality and community, and isolation and mingling. In addition, intensive urban infrastructures have further widened the gap between people and the landscape. Therefore, it is imperative to continue expanding the conversation surrounding the physical boundaries between the built and unbuilt environments and the

¹ For example, families with working women, single-person households, and single-parent families, all of which has been increasing since the 1940s (Lasner, 2012).

imaginary boundaries between different cultures. I suspect that the more seamless and flexible these boundaries are, the more connected our landscape would be spatially, environmentally, and culturally.

Coupled with the shifts in urban demographics mentioned above, many modernist residential landscapes are faced with potential forces of change, including changes in ownership, management agenda, and climate. For example, Parkmerced, a neighborhood in San Francisco, California, designed by architect Leonard Schultze and landscape architect Thomas Church and Robert Royston after World War II, is on the cusp of a long-term redevelopment plan. Approved by the City of San Francisco in May 2011, The Parkmerced Vision Plan proposes a neighborhood-wide transformation to triple residential density. To achieve this goal, the plan aims to redevelop all 170 two-story residential buildings (referred to as *garden apartments* in the Parkmerced Vision Plan and in this project), which constitute 80 percent of the original Parkmerced property, into higher density four- to six-story and 13-story apartment buildings. For developers, demolishing the older two-story buildings and replacing them with apartment buildings was an attractive option compared to constantly having to retrofit the landscape in response to contemporary conditions. One would argue that retrofitting may be more difficult to execute when compared to replacing, because it requires careful planning and protection of elements to be preserved.

I believe that retrofitting is not only less destructive but also has more potential to lead to a comprehensive and dynamic landscape because place-making is a continual culmination of history, culture, and nature, not a step-by-step process.

Based on these challenges and forces acting on our urban residential landscapes, a question arises: how can we design 21st-century multi-family residential landscapes that adapt to both cultural and natural change? We are currently in the 21st century with a much different cultural, social, political, and environmental conditions than the past therefore, one way to respond to this question is by integrating a 21st-century approach in designing multi-family residential landscapes. For this project, I selected three of Gilles Clément's theories—The Planetary Garden, The Garden in Movement, and The Third Landscape—to answer my research question. These theories were later reorganized as one approach supported by two theories.

The goal of this project is to develop an approach for designing a 21st-century residential landscape that is adaptable to change. In the context of this project, I propose three aspects of adaptability²: 1) variety—initially provide an assortment of space types that could attract people with different needs and backgrounds; 2) flexibility—include

² This definition aligns with Kevin Lynch's three aspects of environmental adaptability: 1) giving the individual a maximum of choice, 2) allowing the individual to take as active a part in shaping his own world, and 3) providing generalized adjustability of an environment or artifact, with minimum effort, to future changes of use (1958 p.16).

spaces that are capable of being transformed and would cater to multiple uses; and 3) capacity—incorporate landscape structures that are capable of being modified to reflect future needs. By designing an adaptable residential landscape, it could attract residents with different backgrounds who would continue to tend the landscape, contribute to the dynamism of the neighborhood, and ultimately cultivate a community with an identity and a capacity of inclusion that exceeds the original 20th-century design. The focus of this project is not the initial diversity of individuals, but how individuals with diverse needs, preferences, and backgrounds could find their niche within a neighborhood that has diverse spatial typologies in place.

To develop an approach for designing an adaptable 21st-century residential landscape, this project reinterprets Gilles Clément's theories into design strategies for multi-family residential landscapes and tests these strategies on a design site. Seven design strategies were generated to address ways to design spatial programs, connective tissues, architectural elements, and planting patterns. Four design elements serve as physical expressions of these strategies.

The targeted audience for this project is anyone interested in designing or living in multi-family homes. These design strategies demonstrate the broad implications of Clément's theories and are intended to be scalable, transferable, and accessible to developers, planners, landscape architects,

garden designers, architects, interior architects, researchers, educators, students, homeowners, and urban dwellers.

For planners and developers, this could be an aid when spatially composing different programs at an urban planning scale; for landscape architects and architects, this could be an inspiration for a more generative and integrated approach to our built environments; for caretakers, this could be a guide to a maintenance regime that could lead to a functional and healthy landscape with a new aesthetic. Moreover, this project advocates for considering all space types as a collective whole, which could be a catalyst for new ways of collaboration between landscape-related disciplines, including planning and policy, landscape architecture, architecture, interior architecture, historic preservation, ecology, horticulture, to name a few. Eventually, the project intends to raise awareness about human-landscape relationships and inspire those who are looking for a place to call home.

METHOD OVERVIEW

This project interprets and tests Gilles Clément's theory of human-nature relationships in the context of adapting a 20th-century modernist multi-family residential landscape for the 21st century (Figure 1.1).

"Research through designing," or in other terms "projective design" and "research-by-design" (Lenzholzer *et al.* 2013),

is the main methodological approach used in this project. Lenzholzer *et al.* discussed the various relations between research and design: 1) research for design, where “research informs design to improve the quality of the designed artifact and to increase its reliability,” 2) research through designing, where “the design activity is employed as a research method,” and 3) research on design(ing), where “research is carried out on finished design products (substantial) or on the design process (procedural)” (p.121).

In Lenzholzer *et al.* (2013) “designing” as a verb is defined as “the process of giving form to objects or space on diverse

levels of scale,” not to be confused with “design” as a noun, which is the “results of a design process” (2013 p.121). In this project, the process of theory interpretation, design strategy generation, site planning, and site design, all contributed to research through designing, and resulted in a new approach to designing, the fundamental action in the field of landscape architecture (Table 1.1).

This project utilizes four of the nine strategies of inquiry identified in Deming and Swaffield (2011 p.9) (Table 1.2). See Table 1.1 for the four strategies and methods related to the strategies that were utilized throughout this project.

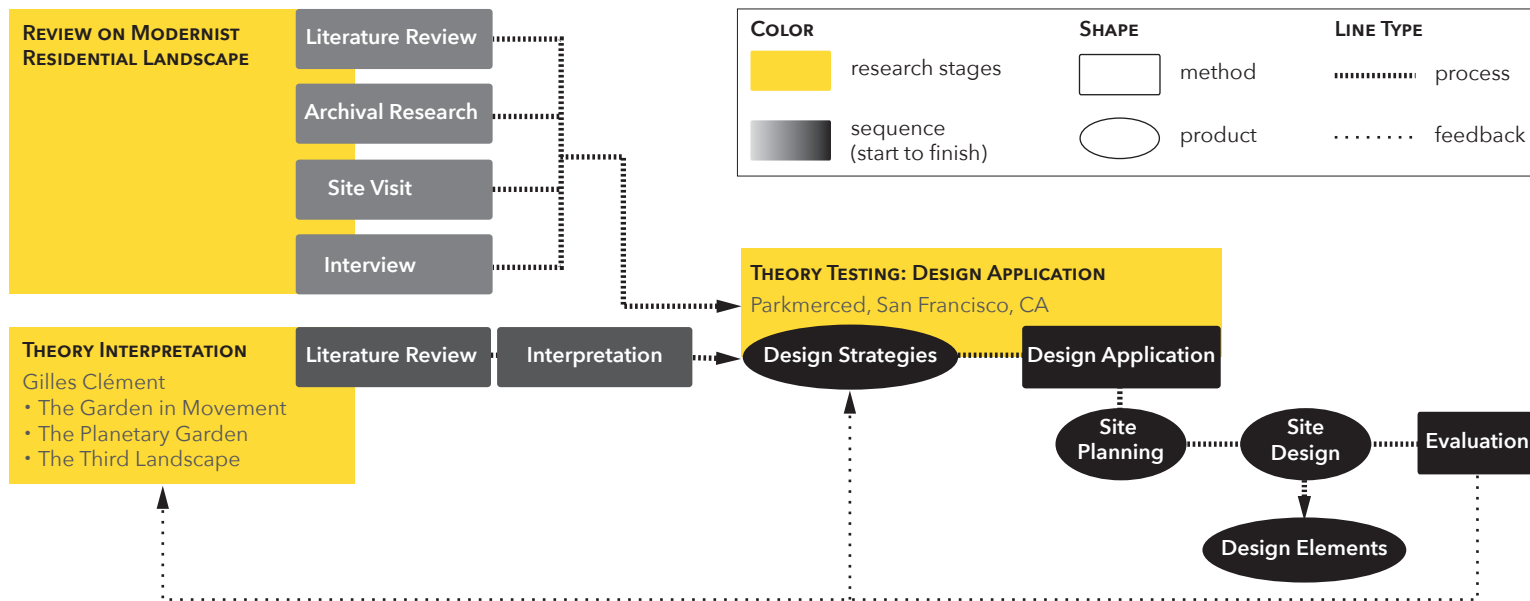


Figure 1.1 Process diagram.

Table 1.1 Strategies of inquiry and methods in relation to project chapter.

Research & design interaction (Lenzholzer <i>et al.</i>)	Strategies of inquiry (Deming and Swaffield)	Methods (Deming and Swaffield)	Related chapter
Research through designing	Description	<ul style="list-style-type: none"> • Direct observation • Secondary description • Aspects of case studies 	II, III
	Interpretation	<ul style="list-style-type: none"> • Aspects of formal and iconographic analysis • Historical narrative 	
	Projective design	<ul style="list-style-type: none"> • Design as research • Design operations • Design as interpretation 	IV
	Evaluation & diagnosis	<ul style="list-style-type: none"> • Design evaluation 	V

Table 1.2 Strategies of inquiry (Deming and Swaffield). The four strategies used in this project are shaded grey.

Strategies	Inductive (theory building)	Reflexive (theory/ practice interactions)	Deductive (theory testing)
Objectivist	Description	Modeling and correlation	Experimentation
Constructivist	Classification	Interpretation	Evaluation and diagnosis
Subjectivist	Engaged action	Projective design	Logical systems

Multiple methods are incorporated to answer the research question including: literature review, archival research, site visits, interviews, theory interpretation and distillation, design strategy generation, design application, analysis, and evaluation.

Literature Review on Clément's Theory

A review of primary literature written by (but translated from French into English by others), and interviews with, Gilles Clément are the beginning points for this project. Clément has written widely and his theories have been published in books such as *Les Livres Jardins de Gilles Clément* (1997), *Thomas et le Voyageur* (1998), *Les Jardins Planétaires* (1999), *Éloge des vagabondes* (2002), "Manifeste du Tiers-Paysage" (2004), *La Sagesse du Jardinier* (2006), *La Salon des Berces* (2009), and *Jardins, Paysage et Genie Naturel* (2012), to name a few. Unfortunately, very few of these were translated into English.

This project focused on three main English-language sources—*The Planetary Gardens and Other Writings* (2015) by Gilles Clément, *Planetary Gardens: The Landscape Architecture of Gilles Clément* (2008), written by Alessandro Rocca in cooperation with Gilles Clément, and Clément's website—to aid in understanding Clément's theories. These sources were selected because of their comprehensiveness in explaining Clément's approach and addressing his multiple theories. Three core theories were extrapolated and

identified: The Planetary Garden, The Garden in Movement, and The Third Landscape. A discussion of these theories is presented in Chapter II.

In order to better comprehend and interpret Clément's theories, a review of secondary literature including books and articles written about Clément's theories and his landscape designs, largely in the context of the urban park, was conducted. These landscape designs are concrete examples of how his theories could be translated into design forms.

Theory Interpretation and Distillation

In *The Planetary Gardens and Other Writings*, Clément describes his philosophy and theories in a narrative form without clear hierarchy nor with an exhausted list of these theories. On Clément's website, some theories were explained more substantially in independent sections and others are nested within these sections. However, Rocca, in *Planetary Gardens: The Landscape Architecture of Gilles Clément*, has identified a list of twelve "guidelines for The Planetary Gardens" that describes Clément's recommendations towards a positive people-landscape relationship. These include: 1) The Garden in Movement, 2) Untilled Land, 3) The Planetary Garden, 4) The Third Landscape, 5) Endemism and Diversity, 6) Mingling and Diversity, 7) The Theoretical Continent, 8) Landscape and Garden, 9) The Garden, 10) The Planetary Index, 11) In Praise of Vagabonds, and 12) Climax.

The process started with viewing these twelve guidelines as parallel entities, identifying key elements and intentions, and relating each guideline to design strategies for multi-family residential landscapes. Overall, Clément's discussions focus on dynamic natural processes and propose how cultural attitudes and actions could lead to positive interactions with these processes. Through literature review, I found that Clément's guidelines—adopting Rocca's usage of the term—are easy to comprehend independently; however, when comparing these guidelines, I realized that some guidelines describe an overall concept while others provide more actionable recommendations. Therefore, I reorganized, condensed, and distilled these guidelines into an overall approach expressed through specific theories³ (Figure 1.2).

Clément's theories have manifested in a few urban park designs such as Parc Henry Matisse (Lille, France, 1989-1992), Parc André Citroën (Paris, France, 1986-1998), and Gardens of the Grande Arche (Paris, France, 1991-1998). Aspects of these examples were referenced throughout the document to help further communicate certain theories.

³ Note that "guideline" is a term Rocca selected to address the concepts presented in Clément's work, "approach" is the term I chose to describe Clément's overall attitude and philosophy, and "theory" is a term lower in hierarchy than approach hereafter that explains a distinct concept which provides practical recommendations. Clément uses "theory" more loosely to address his many concepts, which is similar to Rocca's usage of "guideline."

Design Strategy Generation

During theory interpretation, I started to conceptualize the ways Clément's approach and theories could take shape in reality. With Parkmerced in mind, I took note of possible design actions that could be achieved, which later became a rough draft of my proposed design strategies (Figure 1.3). Once the interpretation was completed, I revisited the rough draft and compiled them into seven design strategies. The terms used in these strategies were refined once again during and after the design process. The seven design strategies are metaphorical translations of Clément's theories that could be directly applied to residential landscape design. The ultimate goal for these strategies is to design multi-family residential landscapes that are adaptable to cultural and natural changes. Similar to how Clément's theories were restructured, preliminary strategies were modified into a cohesive language, rearranged hierarchically, and connected to its generating theory (Chapter II). These strategies were then applied to Parkmerced, a multi-family residential community, to evaluate the applicability and transferability of these strategies.

Precedent Study for Site Selection

Literature review, archival research, and site visits to precedent sites were critical steps that aided the selection of a project site—Parkmerced in San Francisco, California, helped identify the gap(s) in knowledge, and provided a point of comparison with Clément's theories.

A literature review of books, articles, and magazines on California Modernism, California outdoor living, selected important figures during California Modernism, selected residential projects designed by these important figures (Table 1.3), and the evolution of suburbanization was conducted to understand the historical background of Parkmerced's designed.

Selected iconic single-family and multi-family residential projects were reviewed to understand general trends and phenomena in California Modernist residential landscapes. Precedents were selected based on comparable characteristics with Parkmerced: location in the San Francisco Bay Area, completion in mid-20th century, and associated with contemporary figures in California Modernism. Thomas Church, Lawrence Halprin, and Joseph Eichler were three of

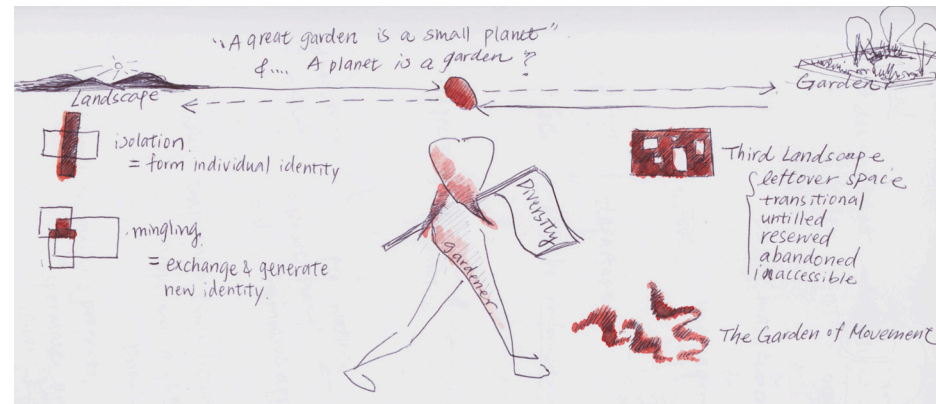


Figure 1.2 Theory interpretation in process, March 2018.

Table 1.3 Selected modernist residential examples

Type	Precedent	Location	Year	Designer
Single-family	Donnell Garden	Sonoma County, CA	1948	Thomas Church, Lawrence Halprin
	Caygill Garden	San Francisco, CA	1950-1951	Lawrence Halprin
	The Highlands	San Mateo, CA	1956-1964	Eichler Homes (developer)
Multi-family	Parkmerced	San Francisco, CA	1942-1950	Thomas Church
	St. Francis Square	San Francisco, CA	1961-1964	Robert Marquis, Claude Stroller, Lawrence Halprin
	Greenwood Common	Berkeley, CA	1952-1958	Lawrence Halprin, William Wurster
	Diamond Heights	San Francisco, CA	1962-1964	Eichler Homes (developer)

Guidelines for the planetary garden

Seasonality: plant sp. physical movement. nature, sun, rain, wind, soil site condition.

The Garden in Movement:

- * work as much as possible w/ nature, as little as possible against.
- * respect for spontaneous settlements.
- * garden design = result of the maintenance person. residential landscape design. *practical force (≠ drawing board).
- * plant travels = result of the dwelling activity pattern; = people travels.
- * change is okay. design to prepare for change. e.g. that force movement is mandatory vs. optional.

Observation: tactical connection to the land. homeless ness. ?

hierarchy: design to prepare for change. e.g. create spaces without function / scale in an organic pattern. encourage movement activity in movement. create clear / easy access to these spaces. multiple.

clusters: home clusters → intimate art. private yard balcony. resting point space, basketball court. playground. community garden. open public. open public. parking.

Untilled Land:

* leftover stereotype. * world places. see what's going to happen. how to introduce this idea into space. * children & major users of the space. = life, chance, rejuvenation, energy out of doors. ≠ decay, death, uncared, unusable.

* Reappropriation of land by nature. = life, chance, rejuvenation, energy out of doors. ≠ decay, death, uncared, unusable.

space in transition of uses? space left open / not programmed, = opportunity taken over by nature.

* Radburn Henry corbett collaborate that relationship. Sunside snow house.

allow for leftover spaces intentionally leave spaces w/ dif. scales unprogrammed upon design.

allow connections between space paths to form after design. leave/build a little rigid edges as possible allow for future change / expansion / transformation.

plant = structure, activity, culture. gardener = all humankind.

The Planetary Garden: Nov. Palimpsest = sth. reused or altered but still bearing visible traces of the earlier form.

overlapping structure / physical ephemeral.

* encourage "AWARENESS" = + (interaction between dif. beings).

* plural eco-ethnological system cultural systems. human practices. culture (country-wide). art/musical / pieces.

* a great garden → a small planet. each site is a new planet / system of its own human kind.

The third landscape: * abandoned spaces = territory of refuge for biological diversity. space of indecision. detourer, untitled edges, nature reserves, neglected, indecision, biological necessities. give value to the normally neglected.

Endemism & diversity: diversity (isolation) = is expressed in the variety of individuals, behaviors, beliefs.

the importance of isolated, private spaces. balcony, 27 small gardens, deck. Create, preserve, include, don't forget/overlook. does not only imply complete sealed off from the public. no public access (physical) but could have visual connection + (individual).

create spaces w/ dif. levels of privacy. scale intensity. in a sense, each site is to a degree isolated from the greater public (planet).

Mingling & diversity: planetary mingling. threaten diversity ← f(man) = sped mingling processes produces new. * seed + host surface. * natural / desirable for mingling.

chromatic message. compatibility, open-mindedness, understanding (compassion), collaboration, tolerance, familiarity. the new norm.

create pit-in-place for encountering. different scales of space. static movement space intimate → general. consider placement of functional zone. place different zones together. Mixed-use.

SCALE: small, intimate, human/culture, active/movement, intense, generative/spontaneous, familiar, developing/degrading, private, isolated, rigid/structured & concrete, order.

large, general, nature, static/relaxed, loose/relaxed, programmed, strange/innovative, established/concrete, public, open/permeable, flexible/free-formed/organic, messiness.

The theoretical continent: set of biomes = biological reality = f(planetary mingling). natural beings stick w/ these people don't.

Landscape & Gardens: observer perceive → demo of thought. landscape, visible, garden, invisible. Cultural symptom, creation of spirit, nothing w/out own image. achieved & affixed through the body/garden. concrete the importance of private space fortified. to create a community identity. opportunity to connect w/ the landscape.

The garden: made out of nature vs. nature. a voyage a walk w/ transition.

The planetary index: garden = f(horticulture) = planetary mingling. every sp. (race of people). designer design w/ diversity in mind. * * * * * max diversity velocity. f(gardener) = intermediate facilitator. how to continue to make the planetary 'machine' function, & make the garden live & the gardener as well.

In Praise of Vagabonds: multiplicity of encounters & the diversity of living being = wealth factors. Community and privacy. Chermayeff diagram relationship. Chris Alexander diagram.

Climate: The Planetary Garden, Theoretical continent, Endemism, Mingling & Diversity, LA & gardens, The Garden in Movement, The Third Landscape, Untilled land.

Figure 1.3 Design strategy generation in process, March 2018.

the more influential figures whose work expressed California Modernism in a residential context, particularly in the San Francisco Bay Area, and the precedent research focused on their work (Table 1.3). These examples are intended to provide an overview of general trends and phenomena in California Modernist residential landscapes.

The Environmental Design Archives (EDA) at the University of California at Berkeley houses collections related to “the significant architectural and landscape heritage of Northern California and beyond” (EDA 2018). Visits were made to the archives during March 2013, September 2017, January 2018, and March 2018 (Figure 1.4). During these visits I examined and photo-documented a variety of projects within the collections of Thomas Church, Garrett Eckbo, Oakland & Imada (Joseph Eichler), Robert Marquis, Claude Stroller, and William Wurster, which include drawings, plans, photographs, business records, and written documents, in order to understand residential design patterns expressed in California Modernism.

To further investigate mid-20th-century residential patterns, site characteristics, and current site conditions, site visits to five modernist residential projects located in the San Francisco Bay Area including Donnell Garden, The Highlands (San Mateo, CA, 1956-1964), Parkmerced, St. Francis Square (San Francisco, CA, 1961-1964), Diamond Heights (San Francisco, CA, 1962-1964) were conducted (Table 1.3 and



Figure 1.4 Author’s archival research at the EDA, UC Berkeley, CA (March 2018).

Figure 1.5). Informal site visits to Parkmerced and St. Francis Square took place in 2013, and formal site visits to all five precedents, for the purpose of this project, occurred in July 2017, September 2017, December 2017, March 2018.

Based on Clément's one approach and two theories, Parkmerced was determined as the design site for its transient rental population, potential to further its landscape adaptability, and its state of facing a dramatic change (Parkmerced Vision Plan, SF Planning Department 2010).

Informal Interviews

In order to better contextualize California Modernism and the design intentions of Thomas Church, I had a conversation in person with Marc Treib, Professor of Emeritus of Architecture at the University of California at Berkeley, in September 2017. Treib has authored and edited publications such as: *Thomas Dolliver Church, Landscape Architect* (2003); *Garrett Eckbo: Modern Landscapes for Living* (1997); and *Modern Landscape Architecture: A Critical Review* (1993).

Conversations with Kenneth Helphand, Knight Professor Emeritus of Landscape Architecture at the University of Oregon and author of *Lawrence Halprin* (2017), were extremely helpful in the evolution of this project and interpreting Gilles Clément's theories. These conversations took place in person intermittently since September 2016 at the University of Oregon.



Figure 1.5 Author documenting site visit to the Donnell Garden designed by Thomas Church (December 2017).

During a site visit in December 2017 at the Donnell Garden, I interviewed Oscar Romero, who is the current caretaker of the garden. The conversation focused on understanding the current use of the estate by the Donnell family, maintenance issues, and future management directions for the garden. This project is an example of the challenges and possible trajectory.

Charles (Chip) Sullivan is a Professor of Landscape Architecture and Environmental Planning at the University of California at Berkeley. Sullivan uses artistic representation to create narratives for landscape histories, design theories, and landscape designs. Conversations with Sullivan about artistic representation as a tool to communicate phenomenon, process, theory, interpretation, and design concept took place during May 2017, June 2017, September 2017, and January 2018.

Site Analysis, Planning, and Design

Site visits to Parkmerced and its surrounding neighborhoods were conducted for the purpose of this project in September 2017 and March 2018. Site visits at Parkmerced were conducted at different times of day to observe, experience, and document human activities as well as spatial organization between spaces (Figure 1.6). These conditions and experiences were documented via photographs and sketches.



Figure 1.6 Author's photo documentation of site visit to Parkmerced at different time of day (March 2018).

Moreover, it was through literature review and visiting the Parkmerced leasing office in March 2018 that I discovered and confirmed the long-term redevelopment plan for Parkmerced. The Parkmerced Vision Plan (2010), is planned to break ground this June. The plan documented the purposes, proposed zoning, site programming, building footprints, and phasing of the trajectory of Parkmerced, which were further evaluated based on the one approach, two theories, and the seven design strategies. Some aspects of this plan were incorporated in site planning, while others were altered to improve adaptability. Chapter III describes in detail my evaluation and response to the Parkmerced Vision Plan.

After site planning, I selected a focused area—two garden-apartment blocks—within Parkmerced that has the most potential to improve in adaptability to further test the design strategies in a more zoomed-in scale than site planning. In addition, the garden apartment is the building type that is to be demolished and replaced by new buildings in the redevelopment plan. Four design elements were generated as a culmination of the historical background of the site and the seven design strategies. Chapter IV documents how the design strategies were used throughout the designing process of the four design elements and the site experience of the proposed design.

II. GILLES CLÉMENT

A contemporary perspective on adaptability and diversity

GILLES CLÉMENT

Gilles Clément (born in Argenton-sur-Creuse, Indre, France in 1943) is a French garden designer, horticulturist, entomologist, and writer, yet he identifies himself as a gardener. To Clément, gardeners work intimately with, not against, each plant and organism, and share an evolving relationship with the land. With a background in agronomy and landscape design, Clément has developed a series of theories that propose a positive and symbiotic relationship between humans and nature.

Clément is highly regarded by Jonathan Skinner¹ as a landscape artist who writes poetically, and is comparable to Frederick Law Olmsted, Robert Smithson, and Ian Hamilton Finlay, whose “works and writings encourage us to ‘read’ [the] landscape” (2011 p.261). Clément has expressed and documented his theories in various books including, *Les Livres Jardins de Gilles Clément* (1997), *Thomas et le Voyageur* (1998), *Les Jardins Planétaires* (1999), *Éloge des vagabondes* (2002), *Manifeste du Tiers-Paysage* (2003), *La Sagesse du Jardinier* (2006), *La Salon des Berces* (2009), and *Jardins, Paysage et Genie Naturel* (2012), to name a few. In addition to his theories, Clément has also published novels, fables, and essays on insects, dogs, clouds, economics, land

¹ Jonathan Skinner: Associate Professor of English and Comparative Literary Studies at the University of Warwick, England, who has translated Clément’s written work and is currently writing a book of investigative poems on the urban landscapes of Frederick Law Olmsted.

art, and politics (Skinner 2011). Aside from written work, Clément has collaborated with city planners and architects, and designed landscapes such as Parc Henri Matisse in Lille (1989-1992), Parc André Citroën (1986-1998), and Grande Arche at La Défense in Paris (1991-1998). He has taught at the École du Paysage de Versailles (Versailles National School of Landscape Architecture) and given lectures internationally at institutions such as the Research Institute for Humanity and Nature in Kyoto, Japan (2015), University of California at San Diego, United States (2011), and Architectural Association School of Architecture in London, United Kingdom (2007).

His work has been well received in professional journals and has initiated dialogues around urban ecology, wilderness, aesthetics, communities, and politics (Gandy 2013). His approach is “not the practice of a ‘return to the land,’ but a human-centered commitment to landscape beyond the human, beyond the pastoral dyad of rural and urban” (Skinner p.261). Gandy refers to the work of Clément as a form of “entropy by design” which provides a possibility for ecological succession to be introduced to the urban landscape (2013 p.275). Similarly, Skinner identifies “movement” as the key word of Clément’s work, which moves across the boundaries between disciplines as well as those between theory (academia) and practice (profession) (2011). Although Clément practices his approach through the management of plant communities, his approach could have metaphoric implications to landscape designers,

architects, planners, politicians, administrators, and land stewards (Rocca p.12).

The main sources that aid in understanding Clément's theories and approach are *The Planetary Gardens and Other Writings* (2015) by Gilles Clément, *Planetary Gardens: The Landscape Architecture of Gilles Clément* (2008), written by Alessandro Rocca in cooperation with Gilles Clément, and Clément's website.

CORE THEORIES

Clément has proposed a number of theories or concepts and coined terms including "The Garden in Movement," "The Third Landscape," "The Planetary Garden," "Theoretical Continent," and "Symbiotic Man." These theories are inspired by phenomena occurring in nature—mingling, endemism, succession—and in human society—border, domination, definition, and categorization. Presented in the following sections are Clément's one approach and two theories that encompass the core of his work. Nested under the one approach—The Planetary Garden, and two theories—The Garden in Movement and The Third Landscape, are supporting concepts—landscape and garden, Theoretical Continent, endemism, and mingling, which are fundamental to understanding the one approach and two theories.

APPROACH

THE PLANETARY GARDEN

/ Le Jardin Planétaire /

The Planetary Garden is an approach that challenges the theoretical boundaries drawn by humans. It emphasizes that the landscape is a collective of complex networks informed by elements and forces. Nothing is ever isolated from one another. The relationship between landscape and garden articulates this approach from the scale of a garden, symbolizing the initial bond between humans and nature; whereas in the Theoretical Continent, Clément demonstrates an example of how we could re-imagine boundaries within the planet Earth.

Landscape and Garden

The English word *garden* is derived from the German *garten*, meaning enclosure or *an* enclosed space. Seemingly enclosed, both external and internal forces—equivalent to Clément's usage of *energies*—effecting a garden are constantly exchanging with those outside the garden boundary. External forces include sun, wind, rain, and animals; whereas internal forces include irrigation, pets, and residents. The garden is at the forefront of human understanding of the landscape, and "the only territory where man and nature meet, in which dreaming is allowed" (Clément 2015 p.82). Informed by the Garden in Movement, nothing is ever completely contained in a garden; species and forces are constantly traveling

across the landscape. Therefore, Clément proposes a new garden enclosure: the biosphere (Clément 2015).

This statement of “a great garden, a small planet” (Rocca 2008 p.25), or in reverse, the planet as a great garden, provides a new perspective that is different from that of the conventional western perspective: humans as a part of nature. By extending the limit of the garden to the planet, some might be troubled by the notion of how a garden is a highly controlled condition, which implies human dominance over nature. This is not what Clément is suggesting. Instead, he is proposing a humanist ecology which is “a way to understanding the relationships between living beings according to the precepts of ecology, without ever excluding humans” (Clément 2015 p.74).

Theoretical Continent

Within the framework of The Planetary Garden, our continents can be reimaged as a “total garden” (Clément 2015 pp.26), the Theoretical Continent. The Theoretical Continent is formed by assembling similar biomes² and placing them in relation to the land and ocean (Figure 2.1). This newly-defined

² Biome: “A biological subdivision that reflects the ecological and physiognomic character of the vegetation. Biomes are the largest geographical biotic communities that it is convenient to recognize. They broadly correspond with climatic regions, although other environmental controls are sometimes important. They are equivalent to the concept of major plant formations in plant ecology, but are defined in terms of all living organisms and of their interaction with the environment (and not only with the dominant vegetation type). Typically, distinctive biomes are recognized for all the major climatic regions of the world, emphasizing the adaptation of living organisms to their environment, e.g. *tropical rainforest biome, *desert biome, *tundra biome” (Allaby 1998 p.52).

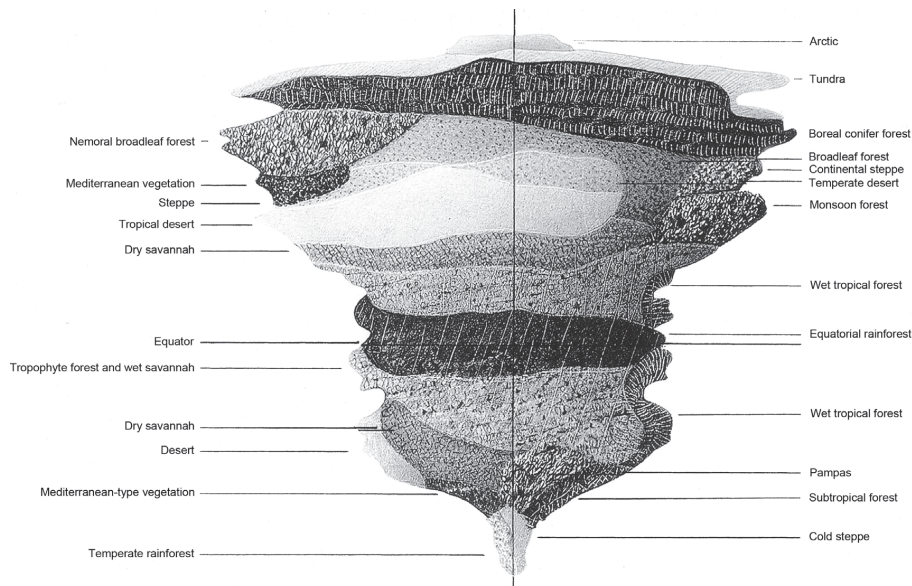


Figure 2.1. Theoretical continent (Clément 2015 p.29).

continuity of the planet challenges existing geographic and cultural boundaries, and the concept of native versus exotic species. Within the Theoretical Continent, native is defined by the different biomes and climate zones, not by cultural, political, or national boundaries. For example, a species native to California is considered exotic to Italy; however, in the Theoretical Continent, species native to only California or only Italy are both native to the Mediterranean climate, and are then “native” and indigenous to both California and Italy³.

TWO THEORIES

1. THE GARDEN IN MOVEMENT

/ Le Jardin en Mouvement /

The Garden in Movement

Plants travel. The Garden in Movement “interprets and develops the energies found in the place, and attempts to work as much as possible with, and as little as possible against, nature” (Rocca p.13). This theory was first conceived through Clément’s experiment in his laboratory, his own backyard, La Vallée, located in Creuse, France (Figure 2.2). Here, Clément intentionally left human judgement of whether a species is good or bad out of his maintenance practices. Instead, Clément’s response to the landscape was informed by the uncertainty and unpredictability of nature’s

³ Native (indigenous): “Applied to a species that occurs naturally in an area, and therefore one that has not been introduced by humans either accidentally or intentionally. Of plants found in a particular place, the term is applied to those species that occur naturally in (i.e. are indigenous to) the region and at the site” (Allaby 1998 p.274).



Figure 2.2 La Vallée (Rocca p.214).

dynamism—establishment, growth, exchange, and decay—and “the synergy between these phenomena, in order to make a place for themselves, but still without destroying that diversity” (Clément 2015 p.84). Every alteration induced by natural processes or humans are a part of succession which creates a new condition of the landscape. For example, if a “weed” established itself in the middle of a path, one could re-direct the path instead of removing the “weed”; and if a tree fell one could preserve it in place instead of removing it. In La Vallée, because of Clément’s patience and close observation of the garden, the apple tree that fell approximately 20 years ago has re-sprouted and is maturing vigorously today.

The Garden in Movement “advocates preserving the species [that have] taken a decision on their chosen position” (Tiberghien 2015 p.viii). This mindset has led Clément to observe more and garden less. Throughout the years, paths alternate, annuals and biennials migrate, unforeseen weather events develop, and trees mature and fall. These incidents have collectively woven a narrative between man and nature that is in harmony, yet ever-changing.

Endemism⁴

Endemism is defined as “the situation in which a species is restricted to a particular geographic region as a result of factors such as isolation or in response to abiotic conditions” (Biodiversity A-Z). It is “a constant manifestation dependent on a specific territory” (Clément 2015 p.6). Geographic isolation prevents species from traveling and exchanging genetic information with other species. The result is the forming of an endemic species, one that is unique to only one place that contributes to the diversity⁵ of the planet as a whole. In human society, one’s endemism is expressed through his or her language, behavior, values, and beliefs. Endemism is a comparative term dependent upon where the boundary of origin is drawn; everyone is endemic to some place by extension and by refinement (Tiberghien 2015).

Mingling

Mingling threatens the diversity formed by endemism, but at the same time creates diversity with new situations and new species. Forces such as wind, rain, currents, and animals bring together organisms that are otherwise distanced or isolated

4 Endemism: “The situation in which a species or other taxonomic group is restricted to a particular geographic region, owing to factors such as isolation or response to soil or climatic conditions. Such a taxon is said to be endemic to that region” (Allaby 1998 p.141).

5 *Diversity* here is used in the sense of biodiversity. *Biological diversity* is defined as the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems (Biodiversity A-Z).

from each other. Humans accelerate and drastically alter this process, resulting in either the generation of new ecological networks or the destruction of existing communities. For example, immigrants bring plants and crops native to their region to a new region, allowing species that would not have existed or would have taken a much longer time to be introduced to this region to take root. These changes are seen in many landscape types such as cities, urban waterfronts, and agricultural lands. Humans are a part of nature's processes, just as are other animals. It is not our place to judge human's "aid" in the traveling and mingling of other organisms. Mingling is essential to evolution and its results are seen in the makeup of our current planet.

The diversity catalyzed by mingling may appear to be contradictory to the diversity catalyzed by endemism, yet it is scale that plays an important role in understanding the difference. Considering the scale of the planet, if there are more isolated habitats, there would be more endemic species, hence, greater planetary diversity. On the other hand, mingling between different species leads to the exchange of genetic information, thereby increasing the diversity within the bounds of a regional habitat. The dynamism caused by this interaction between isolation and mingling collectively results in overall biodiversity. The significance of indigenesness diminishes as we begin to understand the planet as an integrated whole. We are all allies indigenous to the Earth.

2. THE THIRD LANDSCAPE⁶

/ Le Tiers Paysage /

The Third Landscape provides a different perspective that values the untilled, abandoned, ignored, and inaccessible landscapes as places with "biological intelligence" (Tiberghien 2015 p.ix), as refuges for all, and as spaces of the future. The term "Third Landscape" originated from the term the "third estate", a term coined by Abbé Sieyès during the French Revolution to define those that were neither the first nor second estate—that is, neither clergy nor aristocracy. The theory of The Third Landscape derived from a landscape analysis conducted by Clément and commissioned by the Center of Art and Landscape in Verssivière, Limousin. Under the independent management of forest engineers and agricultural engineers, Clément pointed out the binary characterization of the study site: shaded forest and open pasture land. Despite being managed by "experts", diversity was found in neither, but was found in the Third Landscape—the neglected, the difficult to tend, and the in-between spaces. Articulated for the first time in "Manifeste du tiers paysage" (Clément 2004), The Third Landscape is identified as "the totality of all those places abandoned by man" (Tiberghien

⁶ The Third Landscape is not to be confused with John Dixon Hunt's definition of 'first nature' being wilderness, 'second nature' being the cultivated land, and 'third nature' being the garden. However, it shares some similarities with the 'fourth nature', later developed in the 20th century. While the fourth nature addresses nature generated in post-industrial sites and cracks of the built structures, The Third Landscape focuses on the possibility of human co-inhabiting with nature and consider this type of 'fourth nature' as an act of landscape practice.

2015 p.ix). Clément later expanded this definition to include places such as roadsides, riverbanks, inaccessible spaces, ecotones, and reserves.

Derborence Island in Parc Henri Matisse, located in Lille, France (Figure 2.3), is a powerful example of how The Third Landscape can be manifested into landscape design. Parc Henri Matisse was designed by Clément in collaboration with Éric Berlin, Claude Courtecuisse, and Sylvain Flipo, and was completed in 1992 as a part of the Euralille project. This was one of the most ambitious redevelopment projects to transform a post-industrial city into a service-based urban economy hub. Parc Henri Matisse consists of two main elements: an open lawn area and Derborence Island, an inaccessible 23-foot-tall central plateau of less than an acre. The island was partially built from the excavation debris for the new Eurostar TGV Station⁷, which was used to backfill a perimeter concrete wall directly poured on site. Derborence Island's name is derived from the primary forest, Derborence Forest, in Switzerland. The island was initially planted with species suitable for the European boreal biome and surveyed twice a year thereafter. Situated in the center of an expansive open space, "a natural process has been transformed into a vertical symbol, coveted and unreachable, yet the focus of our attention and astonishment; a fragment of nature left to itself in the heart of the city, an island" (Gandy p.259).



Figure 2.3 Derborence Island in Parc Henri Matisse, Lille, France.
(Rocca pp.120-121)

⁷ TGV: Train à Grande Vitesse, which is France's high-speed rail service.

DISCUSSION

Clément hinted in his writing that despite his focus on non-human organisms—plants in particular—his theories could have implications to all realms of our everyday lives, including social constructs and political management (Clément 2015). Clément's theories emphasize the value of spontaneously-formed communities—plants, animals, and human settlements alike. By taking spontaneity into consideration, it is assumed that forces are constantly acting on the landscape and bringing about new forms, new dynamics, and new changes without being overly controlled by humans. He encourages humans to let go of our dominating habit, to let nature be. This could lead to a more diverse ecological community, as evidenced in abandoned places, or in *The Third Landscape*. From an ecological and biological standpoint, diversity strengthens the complexity of an ecosystem, which would minimize the impact of a stressful event, thereby increasing resiliency against abrupt change and adaptability to gradual change.

Although Clément did not spell out the ultimate goals of his theories, it is apparent that by adopting *The Planetary Garden*, *The Garden in Movement*, and *The Third Landscape*, one can design a dynamic landscape that is diverse and adaptable to both natural and cultural changes.

In this project, I attempt to reinterpret and apply Clément's three core theories to envision a new approach towards

designing spatial programs, connective tissues, architectural elements, and planting patterns. The focus of this project is not the initial diversity of individuals, but how individuals with diverse needs and backgrounds can find their niche within a neighborhood that has diverse spatial typologies in place. Over time, residents would come and go, altering the landscape, and ultimately, forming new identities that are endemic to its place. The ideal neighborhood is a small planet, a neighborhood in movement, and a *Third Landscape* that is inclusive for all.

In reflecting upon the conventional design processes—conceptual design, design development, construction documentation, and construction administration—it is apparent that nothing is ever static. Incidents arise and one must respond with a solution that has minimal impact and maximal advantage. Moreover, once a project has been completed, designers are almost always disengaged from the site. Perhaps it is time to reconsider our design approaches: how can we provide a place with enough initial structure that could allow for organic additions and subtractions to occur after initial design has been implemented? This is a gardener's philosophy: "Perhaps the gardener is not someone who makes forms survive over time, but over time, if possible, ensures that enchantment survives" (Clément 2015 p.169).

There are hierarchical and operational differences between Clément's one approach and two core theories. *The Planetary*

Garden describes a landscape, a dimension, a container, or a canvas, where The Garden in Movement and The Third Landscape interplay. The Planetary Garden proposes a new perspective towards how we could begin to view boundaries as flexible and hypothetical lines. The Garden in Movement and The Third Landscape prescribe recommendations that are actionable; to do as little as possible against nature's trajectory. It is an interactive editing process of addition and subtraction. The Planetary Garden is considered the highest in the hierarchy, which led to the overall design approach for my project. The Garden in Movement and The Third Garden are translated into design strategies for multi-family residential landscape that are subject to The Planetary Garden (Figure 2.4).

DESIGN STRATEGIES

Both Clément's theories and the goal for this project is adaptability that includes aspects of variety, flexibility, and capacity to respond to future change. Adaptability is the quality a design should have initially which leads to future diversity, inclusiveness, and dynamism.

The overall approach of my design strategies is in parallel with The Planetary Garden. The Planetary Garden challenges the preconceived concepts of a boundary. To do so, I encourage us to think about the boundary beyond a thin line, but rather an expanded gradient. Therefore, my overall approach is to engage with the gradient. The gradient represents the in-between dimensions of opposites (Figure 2.4). The aim of the design strategies is to create a gradient of public and private, open and intimate, large and small, active and static, as well



Figure 2.4 The gradient.

as intensively and extensively programmed spaces. In other words, I aim to bridge spaces with opposing characteristics and most importantly, expand and include the varying in-between spaces. For example, one could find intimate niches within an expansive park and at the same time, encounter punctuated reliefs within a small enclosure. Each space is a continuation and extension of another that is defined by boundaries in movement. These strategies are meant to be applied towards the organization of site programming, architectural elements, open spaces, connective tissues, and planting selection. Figure 2.5 presents the hierarchy of overall project goal, design approach, and design strategies, and their origins in relation to Clément's theory.

These strategies are:

- intentionally implement non-programmed spaces
- require private spaces for each unit
- allow connections and paths to be formed after design implementation
- minimize the presence of rigid and impermeable edges
- create spaces with a gradient of scale, amenity, and activity
- repeat similar functional zones and space types throughout the community
- connect spaces with explicit and implicit pathways

The Third Landscape stresses the value of inaccessible and ignored spaces. Therefore, to apply this in a residential context, I propose to intentionally implement non-programmed spaces and require private spaces for each dwelling unit. The Garden in Movement reminds us that the landscape is never static, and a collaborative relationship between people and landscape is critical. Therefore, by creating spaces with a gradient of scale, amenity, and activity, and repeating spaces with similar functions and experiences throughout the community, it can create attractions to draw people to different corners of the neighborhood. Moreover, this is intended to be a domestic landscape in movement where pedestrian movements are marked by both implicit and explicit pathways. Finally, to allow for the ecotone to generate elements and forces that exchange fluidly, I propose that we allow connections and paths to be formed after design implementation and minimize the presence of any rigid or impermeable edges.

Chapter III introduces the selected site, Parkmerced, where the design strategies were tested and Chapter IV describes the how, where, in what forms, and the proposed experience resulted from applying the seven design strategies.

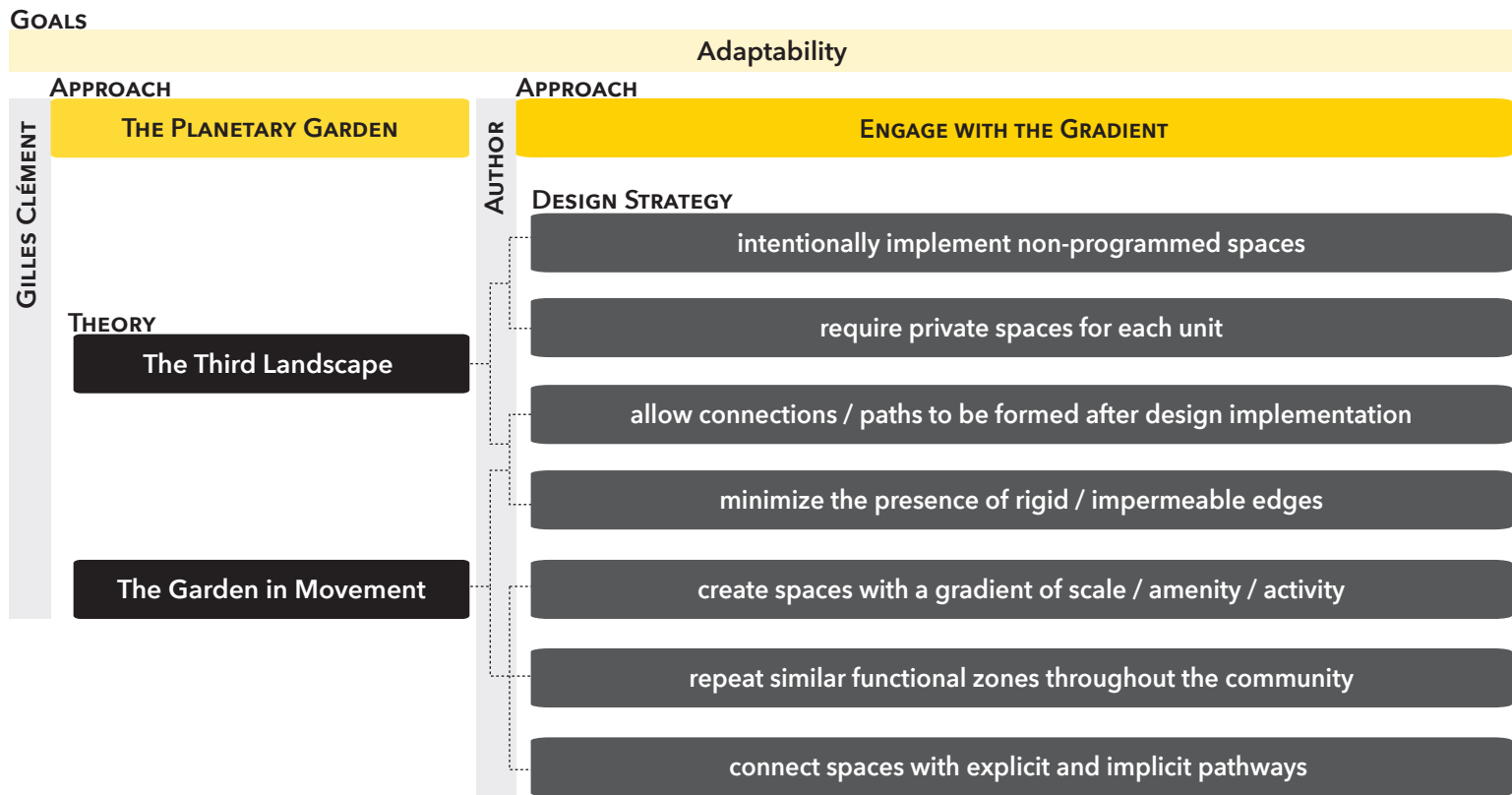


Figure 2.5 Theory-strategy origin.

III. PARKMERCED

A Modernist landscape on the cusp of change



Figure 3.1 Parkmerced (aerial photo from Google Earth, May 2018). Site boundary from Transportation Plan (2011).



Figure 3.2 Watercolor painting of the Juan Bautista Circle (March 2018).

OVERVIEW

Parkmerced is a middle-income housing development built between 1941-1951¹ in San Francisco, California (Figure 3.1) by Metropolitan Life Insurance Company to provide middle-income housing after World War II. Parkmerced was designed by architect Leonard Schultze and landscape architect Thomas Church, with the assistance of Robert Royston. This is a 152-acre neighborhood located in the southwestern part of the City of San Francisco and was conceived of as “suburban living in the city” (Parkmerced Vision Plan 2010 p.18) and was recognized by The Cultural Landscape Foundation (TCLF) as one of the “Marvels of Modernism” (2008). The development is currently owned by Maximus Real Estate Partners.

Immediately north to Parkmerced is San Francisco State University, to the west is Lake Merced, and to the south and east are mostly single-family residential neighborhoods. Vehicular-centric roads arrayed out from a central green open space, Juan Bautista Circle (Figure 3.2), forming pie-shaped residential blocks. Situated within these blocks are 11 13-story apartment buildings (referred to as *towers* or *high-rise apartments*²) (Figure 3.3, 3.4) and 3,221 housing

¹ According to the Parkmerced Vision Plan, Parkmerced was constructed between 1941 and 1951. Whereas according to The Cultural Landscape Foundation (“Parkmerced”), it was constructed during 1940 to 1951.

² High-rise building: A building with an occupied floor located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access (“2018 International Building Code”). This project uses this definition to refer to the 13-story residential buildings; whereas in

units in 170 two-story residential buildings (referred to as *garden apartments* in the Parkmerced Vision Plan and in this project), the later constituting almost 80 percent of the site (Figure 3.5, 3.6).

Within each garden apartment residential block are inner courtyards, which are primarily enjoyed by residents dwelling in these apartments (Figure 3.7). I refer to one courtyard with its surrounding buildings as one cluster, and each garden apartment residential block consists of three to four clusters. This unique configuration allows residents to enjoy some qualities that one would normally find in suburban single-family homes. For example, the courtyard serves as a backyard where residents tend their own gardens, enjoy an outdoor grill, or simply use it as a space for everyday storage. Despite the fact that these courtyards are communal spaces without physical barriers to the public, a sense of privacy is created through the use of hedges and clear visibility from apartment windows and doors. It is a great example of how a residential landscape can be both urban and suburban, private and public, as well as personal and communal. It is a hybrid space.

Parkmerced Vision Plan, they are referred as residential mid-rise buildings.

HISTORICAL BACKGROUND

The incorporation of the outdoors into residential home designs was integral to the modernist movement in California. Its mild climate, coupled with temporal and cultural factors such as the increase in leisure time in the early 20th century, economic growth, a population boom after World War II, ample space in suburban homes, an increase in the number of middle-class families, and the breakdown of formal lifestyles led to the creation of strong connections between the house and garden.

Treib in a 1993 book chapter discussed in-depth six “axioms for a modern landscape”, including 1) a denial of historical styles, 2) a concern for space rather than pattern, 3) landscapes are for people, 4) the destruction of the axis, 5) plants are used for their individual qualities as botanical entities and sculpture, and the 6) integration of house and garden.” Almost 20 years later, Treib focused on the modernist approach that took place in California and identified eight characteristics that described the California landscape modernism. These are: 1) use, 2) indoor/outdoor, 3) space rather than pattern, 4) simplified palette of plants, 5) extensive areas of paving, 6) use of new materials, 7) swimming pools, and 8) regard for Modern Art (2012). Note that there are similarities between modernism and California modernism and distinctions between the two that are influenced by California’s mild climate. Chapter V revisited these modernist characteristics



Figure 3.3 Apartment tower locations (aerial photo from Google Earth, May 2018).

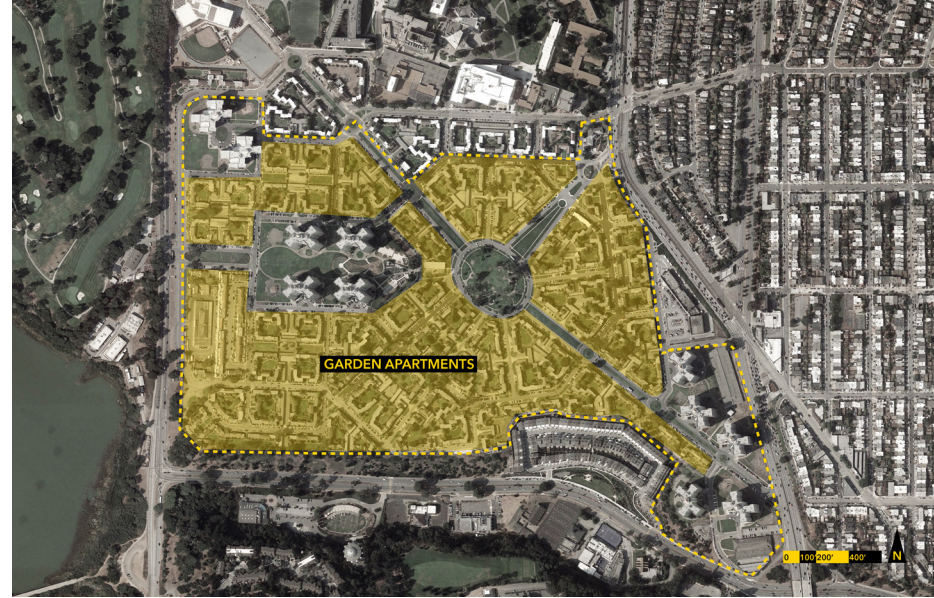


Figure 3.5 Garden apartment locations (aerial photo from Google Earth, May 2018).



Figure 3.4 Residential towers, March 2018 site condition.



Figure 3.6 Garden apartment building (March 2018).

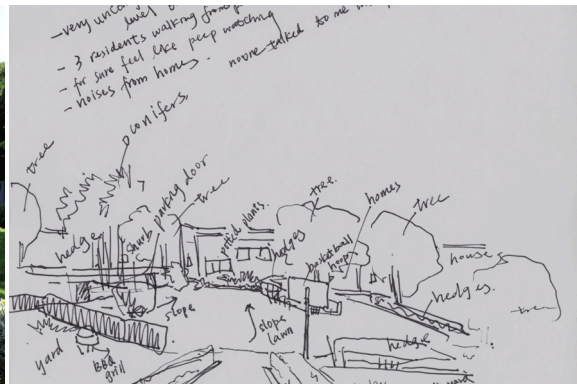
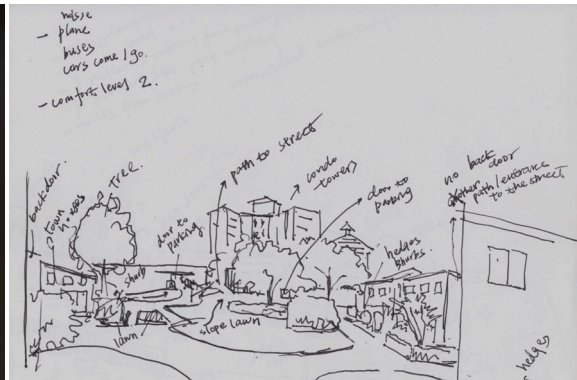
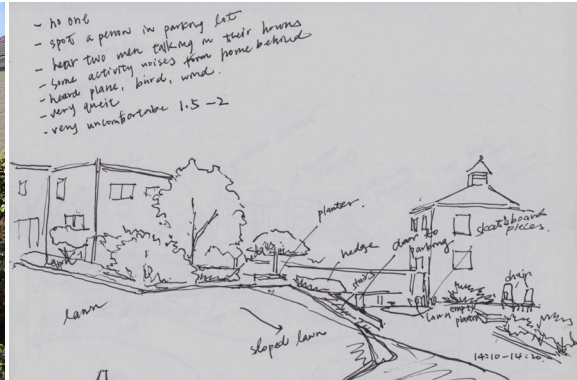
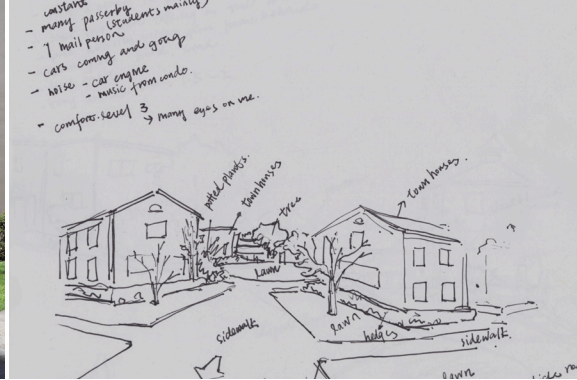


Figure 3.7 Site visit sketches and photo documentation of Garden-apartment courtyards (March 2018).

- constant - many passing (students mainly)
- 7 mail person
- cars coming and going
- noise - car engine - music from radio.
- compares level 3 → many eyes on me.

- no one
- spot a penny in parking lot
- hear two men talking in their homes
- some activity noises from home behind
- noise plane, birds, wind.
- very quiet
- very uncomfortable 1.5 →

- noise plane buses cars come 130.
- compares level 2.

- very windy
- 3 residents walking from p
- for sure feel like peep watching
- noises from homes. more talked to me.

in comparison to Clément's theories.

Influential designers such as Thomas Church and Lawrence Halprin, and Joseph Eichler, an instrumental suburban home developer in California, created homes with seamless transitions between the indoors and outdoors. Their design emphasis shifted from design-style formalities to clients' functional desires as well as local conditions and traditions. They helped to shape an outdoor lifestyle through the use of plant materials, unconventional building materials, and relatively seamless spatial transitions between indoors and outdoors.

A literature review on modernism, the California modernist movement, and designing for the outdoors has not revealed a precise definition of outdoor living. However, the term was broadly used in popular literature, and implied any activity involving the outdoors. These activities included reading on the balcony, gardening in one's backyard, running in a park, farming, and hiking and camping in the woods. However, to Californian families from the 1930s to the 1970s, outdoor living was a residential phenomenon involving gardens and single family homes, often documented in *Sunset Magazine*.

Thomas Church

Thomas Dollivar Church (1902-1978), a renowned landscape architect, was one of the pioneers of modernist garden design in Northern California (Figure 3.8). Many highly respected

landscape architects once practiced under Church, including Lawrence Halprin, Casey Kawamoto, Theodore Osmundson, Robert Royston, Jack Stafford, and Jack Valette.

Born in Boston and later moved to California at a young age, Church was no stranger to the mild Mediterranean climate that is conducive to outdoor living. Having a Bachelor of Arts from the Division of Landscape Gardening and Floriculture at Berkeley in 1923, Church later pursued higher education at Harvard University's Graduate School of Design and later earned a master's degree in landscape architecture from the Harvard School of Landscape Architecture in 1926. During his master's studies, he received the Sheldon Travel Scholarship to travel in Italy and Spain for six months. Upon returning, he completed his master's thesis, *A Study of Mediterranean Gardens and their Adaptability to California Conditions* (1927), in which he compared the gardens of 16th-century Italy with 20th-century California. Both places share a Mediterranean climate (including the need for shade and irrigation while also conserving water), cultural heritage, and outdoor living as a central aspect of domestic life. His analyses of architectural elements, spatial patterns, and plant functionality were further developed in *Gardens Are for People* (first published in 1983, this project cites the 1995 edition).

In *Gardens Are For People*, Church shared his philosophy that there are no set rules for designing a garden besides

responding to its surroundings, as well as to the needs and desires of its owner. He elaborated on the ways that site, design principles (unity, function, simplicity, and scale), arrival sequence, plant material selection, and water features affect design, and he shared examples to demonstrate how these principles could be realized.

Following on from Church's *Gardens are for People* (1995), Marc Treib's chapter on "Maturity and Modernity" in *Thomas Church, Landscape Architect: Designing a Modern California Landscape* (Treib 2003 pp.88-175) and Michael Laurie's chapter on "Thomas Church, California Gardens, and Public Landscapes" in *Modern Landscape Architecture: A Critical Review* edited by Treib (1993), the qualities, characteristics, and primary elements of Church's work can be summarized as the following:

No definite design style: Church believed that good design is not dependent upon a particular style or formality. Instead, it should be realized through an attentive response to the indigenous site conditions, the architecture, the clients' personalities and preferences, and the designer's response to these aspects. Treib asserts that Church's design style could range "widely and wildly from the nominally classical to the stylistically agglomerative" (2003 p.89), further demonstrating Church's breaking away from traditional Beaux Arts garden design.



Figure 3.8 Thomas Church portrait (Carolyn Caddes, EDA, UC Berkeley).

Utilitarian spaces: Church recognized the importance of gardens to serve utilitarian functions, including parking, storage, laundry, garbage, barbeque, and more. According to Church, “the service arrangements must be considered first” (1995 p.30) and then form will follow, not the other way around.

Evergreen vegetation: Church realized that gardens are more than a space for horticultural collections. Therefore, more hardy, reliable, and evergreen plants constitute the main structure of a garden. Very little flowering or specialty plants were used.

Ease of maintenance: Church believed that the success of a design relies on garden maintenance. This was often achieved by extending the paved area, reducing the lawn area, and selecting suitable plants for the site. However, clients who own Church’s gardens have mentioned the large amount of irrigation the gardens require.

An arrival sequence: Church stressed that “the psychology of arrival is more important than one thinks” (1995 p.65). Therefore, size of the arriving walkway and/or driveway, paving design, and tree spaces are all critical elements to consider.

Indoor-outdoor connection: Church used terraces, decks, and patios to extend interior rooms, especially living rooms and kitchens (Church 1995 p.79) to the outdoor spaces.

Careful siting: Church’s gardens were always carefully sited based on the site’s topography, slope, sun exposure, wind pattern, views, and existing trees. He often assisted with siting the architecture if he participated during the early stages of designing a residence.

Accommodation for all members of the family: “Church’s ideas were inclusive rather than exclusive” (Treib 2003 p.136), and he believed that designing for adult members is as important as designing for children, the elderly, and the caretaker. Everyone’s needs should be equally addressed.

Cubist approach to axis: Church stated that “rhythm and movement is essential” because “the eye is a restless organ” (1995 pp.33-34). After the late 1930s, Church began to incorporate a multi-axial approach by using a variety of curvilinear shapes and straight lines to create a multiplicity of viewpoints and a sense of proportion (Laurie p.171).

Boldness in exploring new forms: Church continued to explore new forms in the late 1940s, resulting in “curvilinear pools, zigzags and piano curves, trompe l’oeil, and false perspectives” but “always with respect for context” (Laurie p.172). This further experimentation had resulted in Church’s most well-known designs including the Martin Garden (Aptos, CA, 1948) and the Donnell Garden.

Swimming pool: Church stated that the pool is an outdoor gathering place, “much as a fireplace is in a room” (1995

p.131). This pervasive element in Church's design is a culmination of California's warm climate and an informal domestic lifestyle out-of-doors.

Church contributed to more than 2,000 landscapes throughout his career, most of which were single-family residences, some institutional and commercial work, and several large-scale residential projects completed in the postwar decade, which includes the site for my project—Parkmerced (San Francisco, CA, 1941-1951). In addition to Church's private practice, he served as a consultant to University of California at Berkeley, Stanford University, and Longwood Gardens in Pennsylvania.

SITE SELECTION

Parkmerced was chosen as a site to test out Clément's design for a few reasons:

Residential landscape: It is an opportunity to test Clément's theories in a landscape type that differs from his typical theoretical application in urban parks. Moreover, Clément suggested that his theories have the potential to be used in social or political management. The reasoning behind choosing a residential landscape is that people dwell and "take root in" these landscapes, and just like plants, people move and travel across the landscape.

Urban context: Cities with continuously increasing density like San Francisco have been experiencing the challenges mentioned in Chapter I, such as increasing numbers of people with different cultural backgrounds. As cities become denser, how could one design a residential landscape that is compact and livable, but still have enough outdoor space to cultivate a positive relationship between communities, residents, and their landscape, while simultaneously, being able to express one's individuality in the form of a garden?

Ever-changing community: North of Parkmerced is San Francisco State University (SF State). Many student residents reside temporarily in Parkmerced because of this close proximity to SF State. As this project aims to address cultural, social, and natural change through Clément's core theories, particularly that of The Garden in Movement, this constant fluctuation of people provides an active energy within the neighborhood.

Spatial diversity: The residential landscape of Parkmerced is not monotypic like most large-scale residential developments. For example, the buildings include both high-rise (13-story) and low-rise (two-story) residential apartments; and the outdoor spaces range from public park, community garden, children's playground, dog park, to semi-private courtyards, and private patios.



Figure 3.9 Parkmerced Vision Plan completion perspective (Parkmerced Vision Plan).



Figure 3.10 Parkmerced Vision Plan Open Space system (Parkmerced Vision Plan).

Out-dated landscape. Parkmerced was built during the mid-20th century, after World War II, and the advanced age of the neighborhood is clearly characterized by mature trees and woody hedges with many dead branches, as well as cracks in the concrete elements.

On the cusp of dramatic change. Parkmerced is on its way to a long-term adaptive re-use and renovation guided by the Parkmerced Vision Plan. This trajectory is not unique to Parkmerced. In fact, many neighborhoods around the world are in need of an update due to cultural or natural forces. Therefore, this is an opportunity to be critical about the decisions made in our domestic landscapes.

PARKMERCED VISION PLAN

The Parkmerced Vision Plan, which documents the upcoming redevelopment plan for Parkmerced, was approved by the Board of Supervisors on May 24, 2011 (Figure 3.9). There are four main purposes of the Parkmerced Vision Plan (SF Planning Department):

Residential development: Increase the density to almost three times greater than the existing condition. Out of all 3,221 residential units currently on-site, about 1,683 units within the 11 apartment towers will remain and all other units in the garden apartments will be demolished and transformed into four- to six-story apartments (mid-rise) and

high-rise apartment towers.

Services, amenities, and infrastructure: Transform this residential neighborhood into a mixed-use zone by introducing retail and office spaces into the heart of the neighborhood.

Open space and recreation facilities: Provide 68 acres of publicly accessible open space including parks, athletic fields, public plazas, greenways, and organic farms (Figure 3.10). Additionally, there would be other private and semi-private outdoor spaces provided in the form of courtyards, roof decks, and balconies.

Transportation improvements: Convert a vehicular centric neighborhood into a pedestrian and public transportation centric neighborhood. Described in the Transportation Plan (SF Planning Department 2011 pp.28-32), the SF MUNI³ M line would be rerouted from 19th Avenue, a main street artery, through Parkmerced, and most parking would be placed in underground garages.

The Parkmerced Vision Plan would be carried out in a few phases, with Phase 1 beginning construction this June, focusing on adding new apartment towers (13-story maximum) next to existing 13-story apartment towers. This

provides an opportunity to re-envision how Parkmerced could be retrofitted. How would we work as much as possible with, and as little as possible against, the existing landscape fabric?

³ SF MUNI: San Francisco Municipal Railway is a public transit city serving the City of San Francisco and the San Francisco County, CA. Its network consists of bus lines, trolley bus lines, and light rail lines.

IV. DESIGN

**Incorporating The Garden in Movement and The Third
Landscape in retrofitting Parkmerced**

SITE PLANNING

Respond to the Parkmerced Vision Plan

Parkmerced has been categorized as “at risk” according to The Cultural Landscape Foundation (2018). Although I have yet to come across any additional historical analysis that evaluates Parkmerced’s cultural significance or integrity, there are two reasons why the neighborhood’s historical background should be considered intensively before considering any changes. First, Parkmerced is a collaborative design between Leonard Schultze, Thomas Church, and Robert Royston. It is one of the very few multi-family residential developments that Church was involved in. Second, it is one of the four remaining examples of large-scale, post-World War II residential developments in the United States (2018). Therefore, it is valuable to honor some, if not most, of the landscape characteristics of the neighborhood.

The apartment towers and the existing street configuration radiating from the Juan Bautista Circle are the only two components that will be preserved in the Parkmerced Vision Plan (Figure 4.1). The existing blocks will be divided into smaller blocks by grid-like road connections. More roads and pathways will appear to enhance connectivity; however, the gridded configuration is suitable for vehicular traffic, but not necessarily so for pedestrians. Moreover, it would permanently alter Church’s informal and asymmetrical designs that are intended to “lead your eyes around, [and]



Figure 4.1 Parkmerced Vision Plan’s proposed additional roadway, upgraded residential building, and additional open space (aerial photo from Google Earth, May 2018).

play tricks on you,” said Andrew Wolfram¹ (Weinstein 2008). Although the connections between the spaces are not apparent at first glance, they become clear as one moves through the landscape and encounters the unexpected vignettes.

Instead of imposing a gridded street layout, I propose that the existing parking lots within the garden apartment blocks (Figure 4.2) be removed so that the courtyards will also serve as connections between residential blocks. This way, pedestrians could travel through the site via the connected open-space network, without being required to walk on straight, formal pathways. Most surface parking would be converted into underground garage parking, which is a strategy planned in the Parkmerced Vision Plan (2010 pp.48-49). A few pick-up and drop-off zones, limited to 15-minute parking, would be implemented in close proximity to higher density residential buildings, to accommodate for increased use of ride-share and autonomous vehicles in the future.

The most significant change planned in the Vision Plan is the complete demolition and replacement of the garden apartments (Figure 4.3). The semi-private courtyards, surrounded by clusters of garden apartments, are the most unique characteristics at Parkmerced, because this

¹ Andrew Wolfram: Past President (President during the time of the interview) of the Northern California chapter of Docomomo, an organization dedicated to the preservation of modern design. Principal of TEF Design in San Francisco, CA.



Figure 4.2 Parking structure within garden-apartment clusters (December 2017).

combination provides a way to include suburban-like “backyards” in a multi-family residential neighborhood. The experience within the garden-apartment clusters is neither urban nor rural, public nor private, communal nor individual, but instead an in-between space where opposite experiences can coexist and have the potential to suit the diverse needs of today’s urban denizens.

Prior residents have collectively shaped the qualities and characteristics of its residential landscape. All of Parkmerced’s history and culture has become a part of its “nature” today. By demolishing the garden apartments completely, it is as if one were to take down a forest with a bulldozer so a new landscape could take place. This contradicts Clément’s philosophy to work as much as possible with, and to do as little as possible against, nature. Moreover, this will not improve the diversity of landscape types because all apartments would once again be built during the same era (aside from the 11 existing apartment towers), with the same styles, and would either be four- to six-stories tall or a high-rise tower. The landscape diversity of Parkmerced after implementation of the Vision Plan will not have progressed forward, but instead, would have remained the same.

Instead of removing the existing two-story garden apartments, I propose that a group of buildings within each garden-apartment cluster be replaced by the proposed four- to six-story or high-rise apartments. This approach



Figure 4.3 Parkmerced Vision Plan building massing diagram (Parkmerced Vision Plan).

addresses the design strategy of repeating spaces with similar functions and experiences across the neighborhood. These new groupings would be placed mainly on the north side of the garden-apartment cluster to provide the most sun-exposure to the original garden apartments, courtyards, and productive gardens. This would increase the diversity of building types within each garden-apartment cluster and the entire Parkmerced neighborhood (Figure 4.4). One could then find buildings built either during the mid-20th century or the 21st century, with either modernist or contemporary styles, and varied in height: two stories, four to six stories, and 13 stories. This strategy could have the potential for attracting people with different housing needs and preferences to find a niche where they could call home. Moreover, by introducing a group of buildings with higher unit numbers and greater density into the cluster, a portion of the courtyard directly adjacent to these buildings would be shared by more residents, hence the experience would become more communal than spaces adjacent to the existing garden apartments. This renovation would inject a new variation that activates the gradient between public and private, active and static, and communal and individual spaces. Note that this would only occur if new buildings are introduced as a grouping instead of evenly distributing them, which would result in altering the overall characteristics of the entire courtyard without contributing to the diversity of the space (Figure 4.5).



Figure 4.4. Author's proposed upgraded residential building and additional open space after integrating the Parkmerced Vision Plan (aerial photo from Google Earth, May 2018).

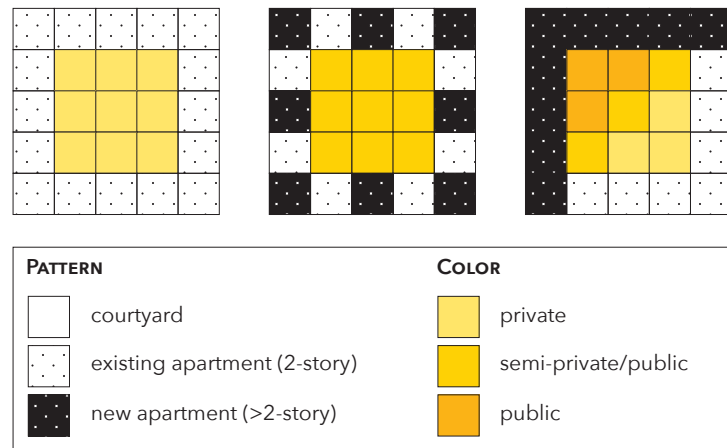


Figure 4.5 Spatial change in relation to architecture.

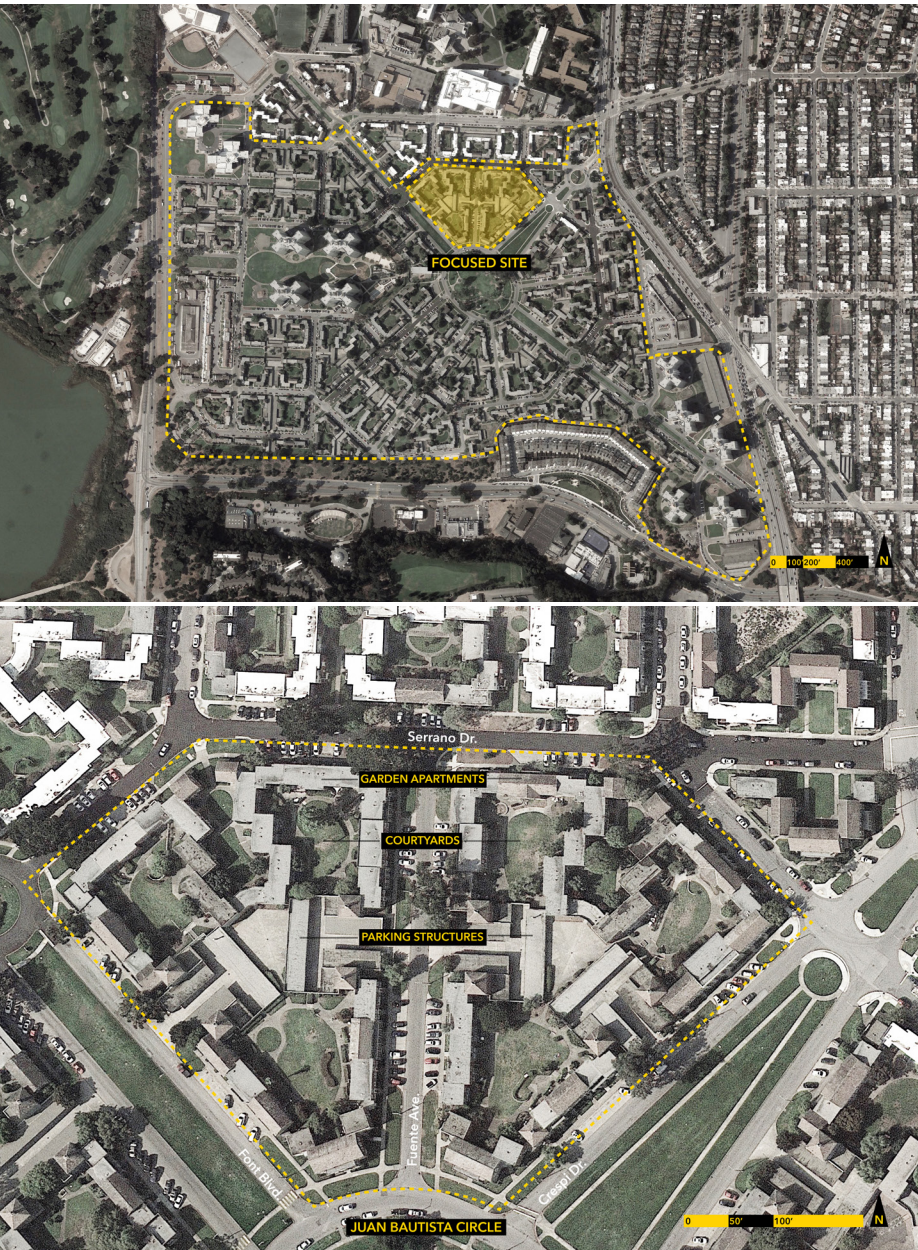


Figure 4.6 Focus area within Parkmerced (aerial photo from Google Earth, May 2018).

FOCUSED SITE DESIGN

I am interested in applying the design strategies beyond the site planning scale and see how the strategies could generate focused site design. Therefore I chose the two garden-apartment residential blocks located north of the Juan Bautista Circle as the focused area for my design (Figure 4.6) for four reasons. First, it is a representation of the majority of the Parkmerced neighborhood because approximately 80 percent of the site are garden apartments. Two, the location of the focus area could demonstrate the spatial relationship between clusters as well as between each residential block to the Juan Bautista Circle, the central public open space. Third, it is an opportunity to articulate the influence of inserting a group of new residential buildings with a higher dwelling density. And finally, these clusters provide an example of how landscape diversity could be achieved, by engaging the gradient between urban and rural, public and private, communal and individual, formal and informal, and humans and nature.

FOUR DESIGN ELEMENTS

Derived from my design strategies are four design elements—1) curvilinear earth mound, 2) staggered concrete block, 3) gradient paving pattern, and 4) dynamic drift planting (Figure 4.7). These elements serve either as

GOALS

Adaptability

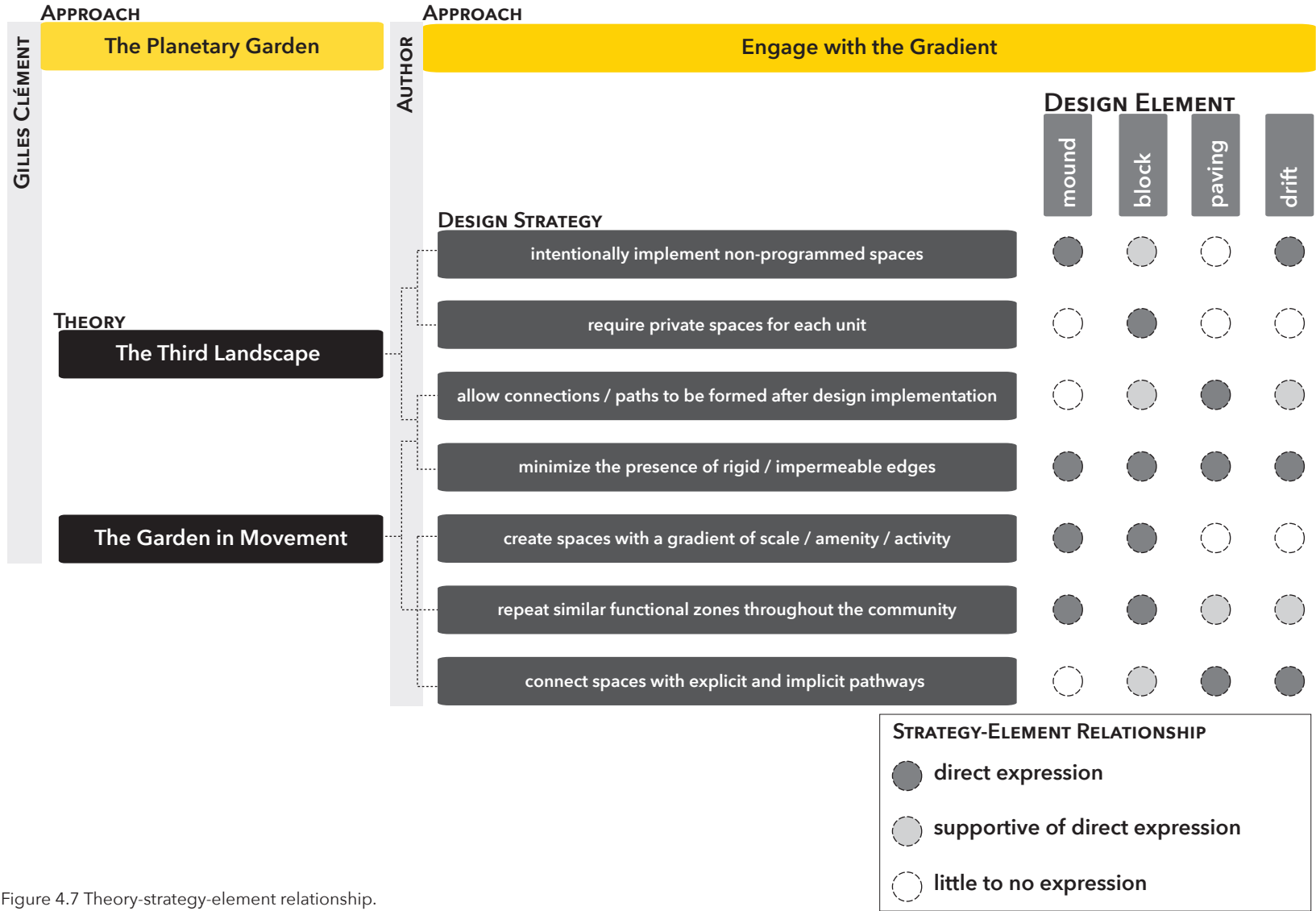


Figure 4.7 Theory-strategy-element relationship.

Table 4.1 Design elements and their functions as per author.

Design element	Function	Defined as
<ul style="list-style-type: none"> • curvilinear earth mound • staggered concrete block 	Director	Elements that direct visual and physical accessibility.
<ul style="list-style-type: none"> • gradient paving pattern • dynamic drift planting 	Binder	Elements that bind different types of spaces.

“directors” or “binders” (Table 4.1). The earth mounds and concrete blocks are “directors” that direct visual and physical accessibility. “Directors” are suggestive boundaries of spaces that shape landscape rooms of different scale and function. While “directors” are static elements that define spatial dimensions, the gradient paving patterns and dynamic drift plantings are “binders” that connect these spaces through movement of people and plants. The form of the “directors” pays tribute to the Modernist Era during which Parkmerced was designed and constructed, while the “binders” are inspired by Clément’s built landscape designs. Together, the “directors” and “binders” form two stages of the design, first to define and then to connect. This process follows the generation (or construction) of a landscape, which begins with grading, then the installation of architectural elements, and finally the installation of plant material. Sections below describe each element in detail and Figure 4.8 demonstrates the complete site design.

1. Curvilinear Earth Mound

An earth mound is a mass of earth material that is constructed to project above the ground level (Figure 4.9). It is a structural element that defines landscape rooms. They are intended to nestle within and diversify the existing topography. Elevated above the ground plane, an earth mound naturally forms a physical barrier for both human and non-human organisms. The higher the elevation is and the steeper the slopes are, the more significant or difficult it is to overcome this physical barrier. Furthermore, if an earth mound is higher than eye-level, it will also act as a visual barrier (Figure. 4.10). The mounds are designed to be varied in height, size, and steepness of slopes, providing different types of barriers, visual interests, and human engagement. Unlike using walls to shape spaces, earth mounds allow for human physical engagement. As one climbs up the earth mounds, the sense of refuge at the base of the mound would transition into a sense of prospect above the surrounding landscape.



Figure 4.8 Site design plan.

The earth mounds are inspired by the rolling hills of the California landscape, while the heart- or kidney-shaped formation references Thomas Church's iconic pool at the Donnell Garden in Sonoma, California (Figure 4.11), as well as the curvilinear geometries presented in Modernist California garden designs. A kidney-shaped mound creates three types of spaces: enclosed basin, fan-shaped opening, and deflective transition. One's eyes would follow along the curved edges that either linger within the intimate enclosure or extend towards the open expansion (Figure 4.12).

The placement of these earth mounds is determined by where privacy is needed and where there are opportunities for smaller-scaled intimate spaces. For example, an earth

mound that is approximately fifty feet long and thirty feet wide, with a summit that is eight feet above ground, is placed in between an open plaza and a courtyard shared by garden apartment residents to provide more privacy to the courtyard (Figure 4.13). The gradual slope intentionally faces the open plaza to create an auditorium experience that overlooks the plaza, while the steeper slope points towards the path that leads to the garden-apartment patios, marking the transition from an active open space to a static intimate courtyard.

Although the earth mounds are static elements, the adaptability of this structure lies in the limitless scale and continuous curvilinear edges, creating niches with diverse experiences both surrounding and on top of the mounds.

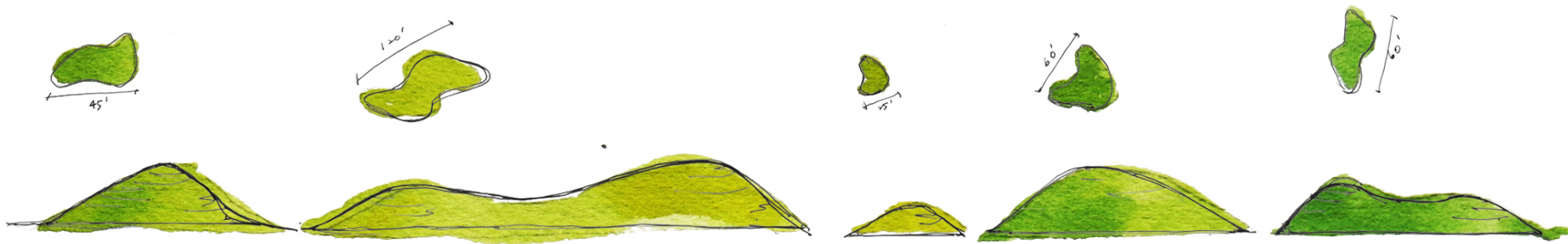


Figure 4.9 Possible configuration of earth mounds.



Figure 4.10 Study of mounds as physical and visual barriers.



Figure 4.11 Pool at Donnell Garden (December 2017).

This element addresses the design strategy in that it creates spaces with a gradient of scale, amenity, and activity. One could find a quiet shady spot to lean against a tree and read a book on one side of the mound, while a family is playing catch with their energetic children and pets on the other.



Figure 4.12 Study of viewshed created by curvilinear earth mounds.



Figure 4.13 Earth mound locations.



Figure 4.14 Existing staggered concrete forms (March 20180.



Figure 4.15 Martin Garden (Treib, 2003)

2. Staggered Concrete Block

The proposed rectangular concrete blocks are placed in a staggered line that hint at the existing orthogonal concrete forms designed by Thomas Church and Robert Royston (Figure 4.14) and the orthogonal geometries existing in many modernist designs (Figure 4.15). These existing orthogonal concrete forms can be found marking the paved outdoor plaza immediately adjacent to the high-rise towers, serving as seating and marking the planting beds. Under the proposed redevelopment plan, the outdoor plazas will be replaced by new apartment tower, hence, removing the culturally significant orthogonal forms. Instead of completely mimicking the solid line of the original orthogonal forms, the staggered concrete blocks form a dashed line that will allow human and non-human organisms to travel through the gaps (Figure 4.16). These blocks vary in length and width, and are one to three feet tall (Figure 4.17), creating a permeable boundary that would not block views, nor would they be read as walls. Collectively, the concrete blocks serve

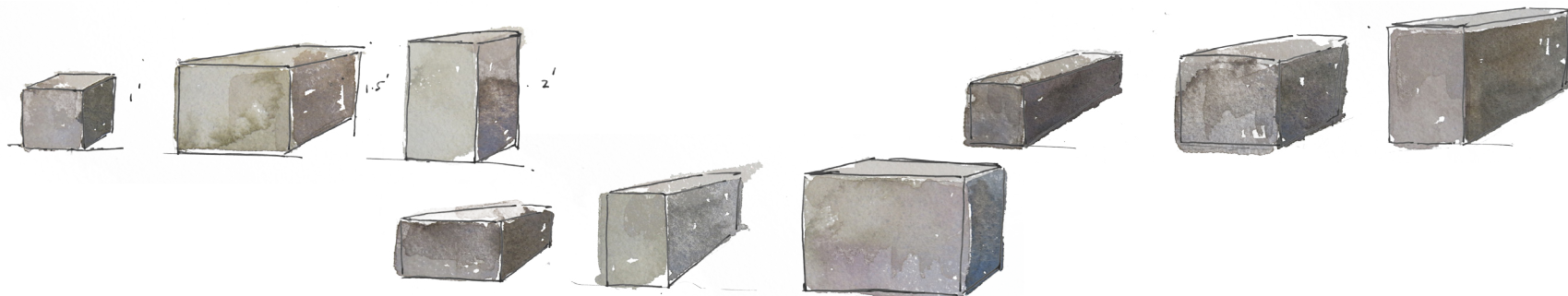


Figure 4.17 Possible block configurations.



Figure 4.16 Staggered concrete block interaction with the landscape.



Figure 4.18 Existing hedges within courtyards (March 2018).

as a permeable boundary, a seating, a play structure, or a structural element that marks the opportunities for planting design.

The staggered concrete blocks are placed more intensively within the garden apartment courtyards, which extend 10 to 15 feet outwards from the garden apartments, defining the private patios. The concrete blocks will replace the aging hedges, which have been shaped into dense boxes that act as thick walls differentiating the private patios from the shared courtyards (Figure 4.18). These hedges are rigid boundaries that do not accommodate the needs of different residents. For example, the hedges allow for two types of experiences: privacy with the hedges and no privacy without the hedges. They do not accommodate for those that prefer a permeable boundary. The staggered concrete blocks would fulfill the purpose of marking the territories between patios, as well as between patios and courtyards. The extent of privacy could then be determined by individual units with vegetation or other garden structures, such as a garden arbor and trellis. The area around the concrete blocks could accommodate any type of planting, including small trees, shrubs, grasses, groundcovers, seasonal ornamentals, and/or edible gardens, just to name a few. Beyond marking the private patios, the concrete blocks could be placed in non-private open spaces as seating that would also guide the movement of the plant community. Figure 4.19 highlights the locations of the staggered concrete blocks.



Figure 4.19 Concrete block locations.

3. Gradient Paving Pattern

Once spaces are defined and architectural masses—buildings, earth mounds, and concrete blocks—are in place, the landscape surfaces on which organisms inhabit can then support spaces of different types and scales into a connective network. These surfaces are designed so that one would find levels of permeability between, as well as within, surfaces. For example, landscape surfaces could be categorized by a continuum defined by permeability, including buildings (the most impermeable), paved patios, paved pathways, and exposed soil surfaces (the most permeable). Furthermore, the paved pathways consist of pavers in four sizes—Class 1 to Class 4—from the largest to the smallest (Figure 4.20).

The gradient paving pattern provides three benefits: it

minimizes the presence of rigid and impermeable edges, it connects spaces with both explicit and implicit pathways, and it allows pathways to be formed after design implementation.

The paved pathways consist of pavers in four size classes with irregular edges, and are laid out in a curvilinear form to mimic the organic traveling patterns of organisms in nature. The irregular, or seemingly broken, edges and mixed materials are inspired by Clément’s paving design at Gardens of the Grande Arche located in Paris, France. He artfully addresses the edges where different materials encounter one another—the relationship between concrete and permeable pavers - as well as paved surfaces and plants. At Gardens of the Grande, plants could only travel within the designated planting areas and the gaps between pavers

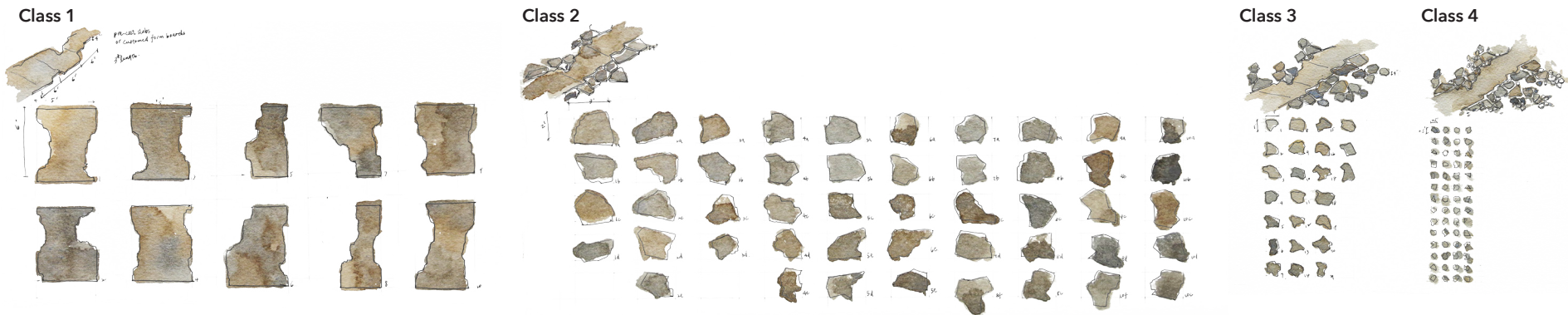


Figure 4.20 Module pavers, Class 1 to 4 from left to right.

(Figure 4.21), restricting the free expression of The Garden in Movement. Therefore, I intend for the paved pathways to provide more opportunities—gaps in various sizes—for plants to migrate through the landscape over time and the potential for pathways to be formed after construction, which was not present in Clément’s design.

The design process for the paved pathways is a generative one. It embraces the fact that what we see at the present moment is a result of past events, and that one generation leads to another. Figure 4.20 demonstrates a customized module system in which the form of each paver begins with a standard grid size: Class 1 being five feet by six feet, Class 2 being two feet by three feet, Class 3 being one foot by one foot, and Class 4 being a half foot by a half foot. The shapes of Class 1 pavers were then free-hand guided by the grid to create an aesthetic of broken edges, which were intended to soften any rigid boundaries and to allow the concrete path to change over time (Figure 4.21). The edges of Class 2 pavers were then determined by the irregular edges of Class 1 pavers, which fit within the negative spaces of Class 1 pavers like a puzzle piece (Figure 4.22). The same logic was then applied to generating the shapes of Class 3 and Class 4 pavers. One phenomenon worth noting is that as the pavers became smaller in size from Class 1 to Class 4, the specificity of the pavers disintegrates and the paver designs become less rigid and more versatile.



Figure 4.21 Paving design at Gardens of the Grande Arche at Paris, France (Rocca p.255).

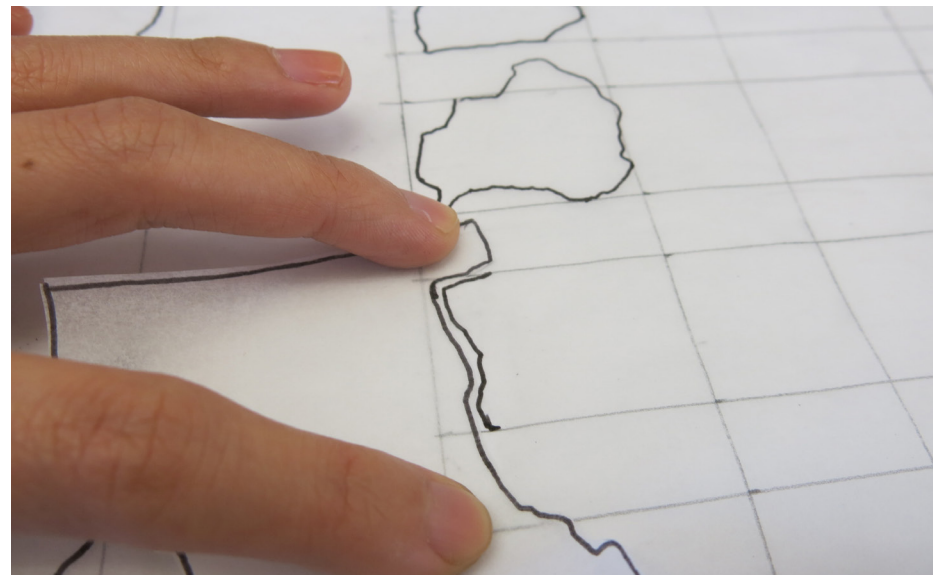


Figure 4.22 Class 2 pavers generated from Class 1 pavers.

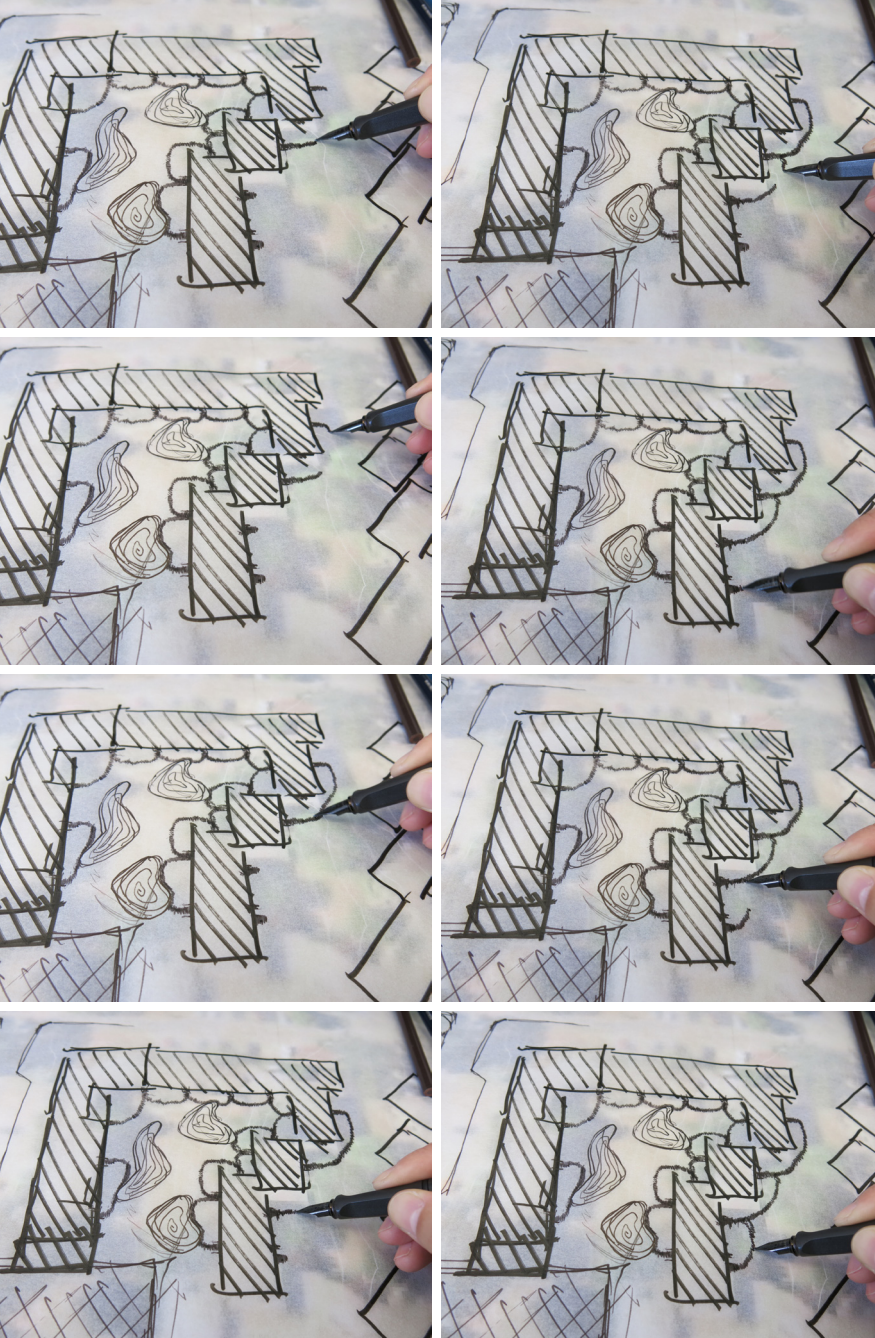


Figure 4.23 Pathway connection generating process.

Once the paver shapes were determined, they were assembled into a gradient pathway, with the largest (Class 1) pavers placed in the center with Class 2, 3, and 4 paving materials placed outwards, forming the explicit pathways. Whereas the implicit pathways are those consisted of pavers that are Class 2 or smaller. This creates an impression of architectural elements dissolving into, and becoming a part of, the landscape. Moreover, the irregular edges of all paver classes allow pathways to be widened, edited, added, and removed without being perceived as out-of-place. Not only do the pavers act as a surface that connects people to their destinations, they form a structure on the landscape where plant communities can migrate over time. Here, The Garden in Movement is expressed through the movement of plants, people, and architectural elements.

These pavers form an interconnected pathway system in the landscape. Figure 4.23 demonstrates how the pathway footprints were formed by connecting the point of departure to their destination. For example, the beginning and ending points of each pathway are first identified. Then connections were then made by extending the two ends of a pathway until they meet in the middle. Figure 4.24 marks the locations of the paved pathways.

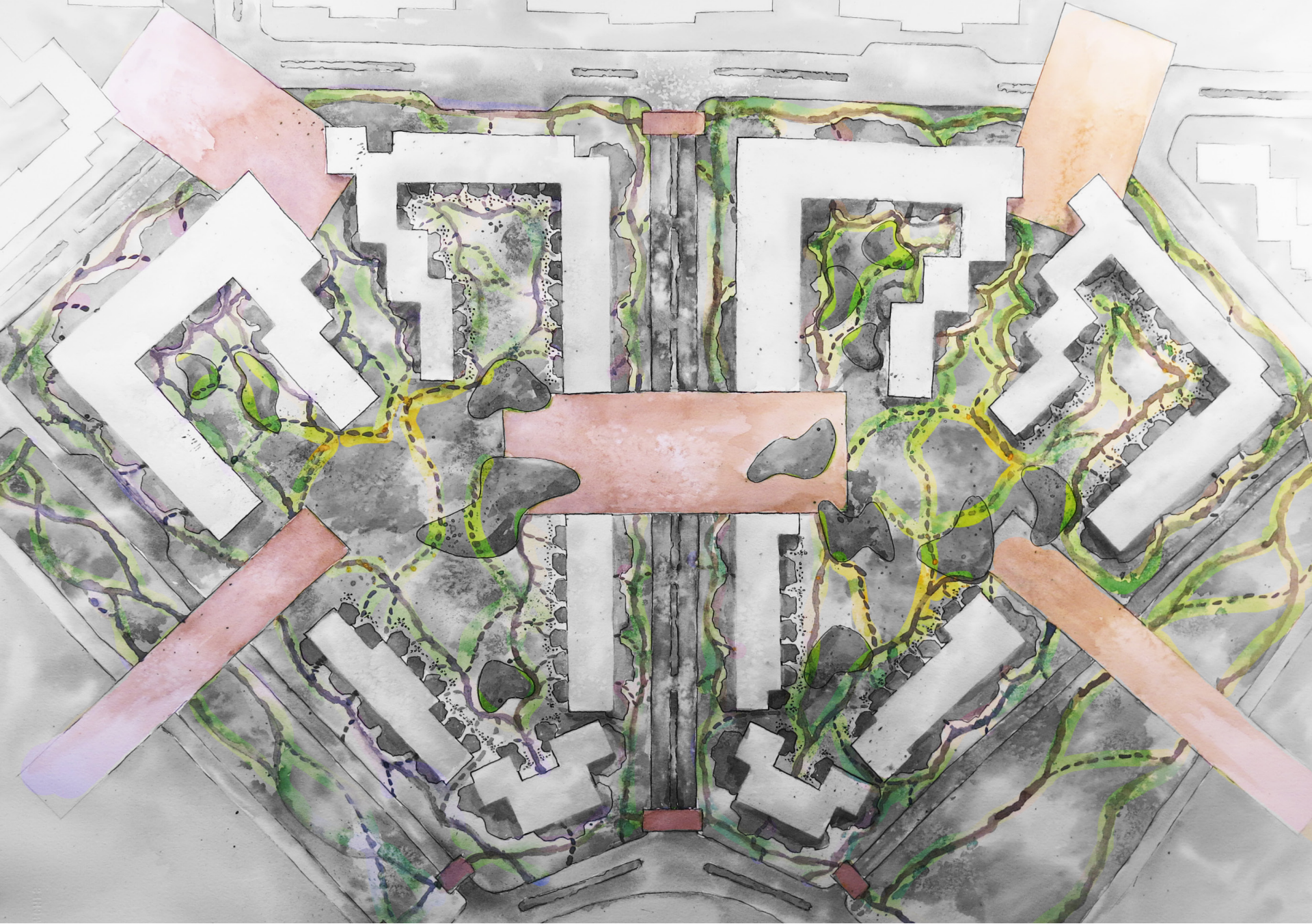


Figure 4.24 Pathway locations.



Figure 4.25 Drift planting at Parc Andre Citroen, Paris, France
(Rocca pp.174-175)



Figure 4.26 Drift planting embedded within pathways.

4. Dynamic Drift Planting

Along with the paved pathways, the dynamic drift plantings connect various spaces and form a coherent identity around Parkmerced. Any unpaved surface is territory for the dynamic drift plantings. It is where culture and nature intermingle with one another, and residents could add to, subtract from, or transport the drifts to another location. It is a true Garden in Movement. It is also a form of The Third Landscape, because the drift plantings resemble the non-programmed spaces that could be transformed into spaces with limitless usage, such as community gardens, dog parks, new pathways, or paved plazas. One could argue that any open space, such as a lawn, also has the potential to be transformed into other spaces. Although this is technically true and possible, most spaces have conventionally been associated with specific usages. For example, a lawn is typically where people relax under the sun, have a picnic, walk their dogs, as well as any other active engagements, whereas drift plantings are neutral and are not associated with a specific function. If such lawn space were to be converted into a pagoda, it would evoke a discussion on whether or not an active space should be converted into a static space.

As the name entails, groupings of plants would be planted in the form of a drift, which is irregular and usually elongated in shape. Although the term “drift” implies a slow continuous movement across space and time, the common practice of drift plantings are somewhat static: the form would appear

to be fluid and have the potential of movement, but in reality, the plant community does not change or evolve over time beyond the initial planting boundaries. Therefore, this design stresses the dynamic quality of these drift plantings, meaning that they would indeed ebb and flow and take different shapes, as well as move across the landscape (Figure 4.25). What you see tomorrow would never be the same as today.

Each drift would be initially planted with a mixture of small trees, shrubs, biennials, annuals, grasses, and groundcovers in different proportions (Figure 4.26). For example, a drift within a garden apartment courtyard would have a few small trees and some taller shrubs to create a sense of privacy, whereas in the Juan Bautista Circle, there would be no additional trees, but would include a few shrubs amidst annuals, biennials, grasses, and groundcover to create visual interest and maintain the expansiveness of an open field.

The criteria for plant selection are synthesized from the characteristics of the plant communities within The Third Landscape and The Garden in Movement. The Third Landscape can be found in ignored, abandoned, inaccessible, or reserved areas, where only plants that are already existing or have naturally sown themselves, and have established without regular maintenance, are currently found. Therefore, these plants—native or exotic—are accustomed to the local climate and could succeed over time without being maintained. Plant communities in The Garden

in Movement are distinct from those in The Third Landscape in two ways. First, humans coexist with plants in The Garden in Movement and are advised to work as much as possible with nature and as little as possible against nature; whereas plant communities in The Third Landscape thrive without the presence of humans. Second, Clément focuses on plant diversity that is a result of natural succession in The Third Landscape; whereas in The Garden in Movement, the process of plant succession and the ever-changing plant community is the subject of interest. Therefore, plants selected for this design should also require minimal maintenance and could self-produce their next generation over time.

In short, plants chosen are adaptable to climate zone 17²: vigorous but not invasive, able to spread by rhizome or self-sowing, require minimal maintenance, need little to no water, and can tolerate extreme conditions such as drought, flood, and fallow soil. Collectively, these plants would provide year-round seasonal interest, various sizes, and a wide range of functionality, including but not limited to: ornamentals, edibles, pollinator attractors, and bank stabilizers (Table 4.2).

Figure 4.27 highlights the drift plantings in the landscape.

2 According to the Sunset Western Garden Book, San Francisco is located in climate zone 17. Zone 17 is a typical coastal peninsula climate featuring “mild, wet, almost frostless winters and cool summers with frequent fog or wind” (2007 p.48). Constant fog cools, humidifies, and reduces the intensity of sunlight, resulting in insufficient heat for certain species with heat requirements to fruit or flower reliably.

Table 4.2 Plant List.

Common Name	Scientific Name	Native	Exotic	Common Name	Scientific Name	Native	Exotic
Trees				Red Buckwheat	<i>Erigonnum grande rubescens</i>	X	
California Redbud	<i>Cercis occidentalis</i>	X		Red Valerian	<i>Centranthus ruber</i>		X
California Bay Laurel	<i>Umbellularia California</i>	X		Rockrose	<i>Cistus</i> spp.		X
California Pepper Tree	<i>Schinus molle</i>		X	Santa Barbara Daisy	<i>Erigeron karvinskianus</i>	X	
Crape Myrtle	<i>Lagerstroemia indica</i>		X	Sea Lavender	<i>Limonium perezii</i>		X
Desert Willow	<i>Chilopsis linearis</i>	X		Showy Milkweed	<i>Asclepias speciosa</i>	X	
Jacaranda Tree	<i>Jacaranda</i>		X	Tall Verbena	<i>Verbena bonariensis</i>		X
Red Silky Oak	<i>Grevillea banksii</i>		X	Wand Flower	<i>Gaura 'Whirling Butterflies'</i>	X	X
Silk Tree	<i>Albizia julibrissin</i>		X	Yarrow	<i>Achillea millefolium</i>	X	
Tea Tree	<i>Melaleuca alternifolia</i>		X				
Valley Oak	<i>Quercus lobate</i>	X		Annuals			
Shrubs				Bachelor Button	<i>Centaurea cyanus</i>		X
Bigberry Manzanita	<i>Arctostaphylos glauca</i>	X		California Poppy	<i>Eschscholzia California</i>	X	
California Toyon	<i>Heteromeles arbutifolia</i>	X		Common Tarweed	<i>Madia elegans</i>	X	
California Flannelbush	<i>Fremontodendron californicum</i>	X		Dusty Miller	<i>Jacobaea maritima</i>		X
Coast Silktassel	<i>Garrya elliptica</i>	X		English Plantain	<i>Plantain</i>		X
Coyote Bush	<i>Baccharis pilularis</i>	X		Five Spot Flower	<i>Nemophila maculate</i>	X	
Fairy Duster	<i>Calliandra eriophylla</i>	X		Godetia flower	<i>Clarkia amoena</i>	X	X
Lemon Bottlebrush	<i>Callistemon citrinus</i>		X	Globe Gilia	<i>Gilia capitata</i>	X	
Matilja Poppy	<i>Romneya coulteri</i>	X		Love in the Mist	<i>Nigella damascena</i>		X
Mesa Bushmallow	<i>Malacothamnus fasciculatus</i>		X	Sky lupine	<i>Lupinus nanus</i>	X	
Rosemary	<i>Rosmarinus officinalis</i>		X	Tidy Tips	<i>Layia platyglossa</i>	X	
Santa Barbra Ceanothus	<i>Ceanothus impressus</i>	X		Ground Covers			
Spanish Lavender	<i>Lavandula stoechas</i>		X	Bearberry	<i>Arctostaphylos uva-ursi</i>	X	
Strawberry Bush	<i>Arbutus unedo</i>		X	California Evening Primrose	<i>Oenothera californica</i>	X	
Western Spicebush	<i>Calycanthus occidentalis</i>	X		Creepig Thyme	<i>Thymus serpyllum</i>		X
Perennials				Ice Plant	<i>Lampranthus</i> spp.	X	X
Blanketflower	<i>Gaillardia</i> spp.	X	X	Lippia	<i>Phyla nodiflora</i>		X
California Fuschia	<i>Zauschneria californica</i>	X		Myoporum	<i>Myoporum parviflorum</i>		X
California Buckwheat	<i>Eriogonum fasciculatum</i>	X		Stoncrops	<i>Sedum</i> spp.	X	X
California Goldenrod	<i>Solidago californica</i>	X		Trailing Lantana	<i>Lantana montevidenis</i>		X
Checkerbloom	<i>Sidalcea malvaeflora</i>	X		Grasses			
Cleveland sage	<i>Salvia clevelandii</i>	X		Blue Gamma	<i>Bouteloua gracilis</i>		x
Central Valley Gumweed	<i>Grindelia camporum</i>	X		California Fescue	<i>Festuca californica</i>	X	
Coyote Mint	<i>Monardella villosa</i>	X		Deergrass	<i>Muhlenbergia rigens</i>	X	
Tickseed	<i>Coreopsis grandiflora</i>		X	Fountain Grass	<i>Pennisetum alopecuroides</i>		X
Creeping Sage	<i>Salvia sonomensis</i>	X		Mexican Feathergrass	<i>Nassella tenuissima</i>		X
Daylily	<i>Hemerocallis</i> spp.		X	Purple Needlegrass	<i>Nassella pulchra</i>		X
English Lavender	<i>Lavandula angustifolia</i>		X	Sheep Fescue	<i>Festuca ovina "Glauca"</i>	X	
Firecracker penstemon	<i>Penstemon eatonii</i>	X					
Spurge spp.	<i>Euphorbia</i> spp.		X				



Figure 4.27 Dynamic drift planting locations.

IMPROVED GRADIENT

This project started with challenging the binary, to selecting a site that has begun to provide a residential experience that is of the in-between. The overall gradient at Parkmerced has been improved through designing with Clément's one approach and two theories, proposed seven design strategies, and four design elements (Figure 4.28). Figure 4.29 presents this improved gradient beginning from the most private garden apartment buildings to the more communal mid-rise new apartment buildings, and to the neither public nor private courtyards.

Walking along the new transect between alternating new mid-rise apartment buildings and the original garden apartment buildings (Figure 4.30, 4.31), one can imagine a new dynamism between the buildings and the gardens, and between each individual unit and its neighbors. In the proposed mid-rise apartment building, a balcony need not be an isolated and private extension of the interior spaces; it could be a wide elevated hallway which includes a private



Figure 4.28 Improved gradient.

area for each unit while acting as a communal pathway (Figure 4.32, 4.33). This provides an opportunity to improve the relationship between individual dwelling units that are seemingly distant in our society today, while simultaneously, enabling one to express their individuality in a communal space. One could find a group of friends barbequing, a parent teaching his/her child gardening, and a joyful individual strolling through the courtyard (Figure 4.34, 4.35).

Similarly, those who dwell in the garden apartments could now enjoy a more interactive lifestyle with their neighbors while preserving the privacy they originally have. Earth mounds placed outside the garden-apartment courtyards mitigate the increased sense of public-ness resulting from removing the parking structures (Figure 4.36, 4.37). Entering the garden-apartment courtyards, those who live within treat this space as a sanctuary mainly shared with their neighbors, while the private patios marked by staggered concreted blocks are quietly tucked away from the public eyes (Figure 4.38, 4.39).

The mid-rise apartments are for those that prefer smaller units and enjoy a denser urban experience, while the garden apartments are for those that are longing for a suburban home yet are grateful for the convenience a city offers.

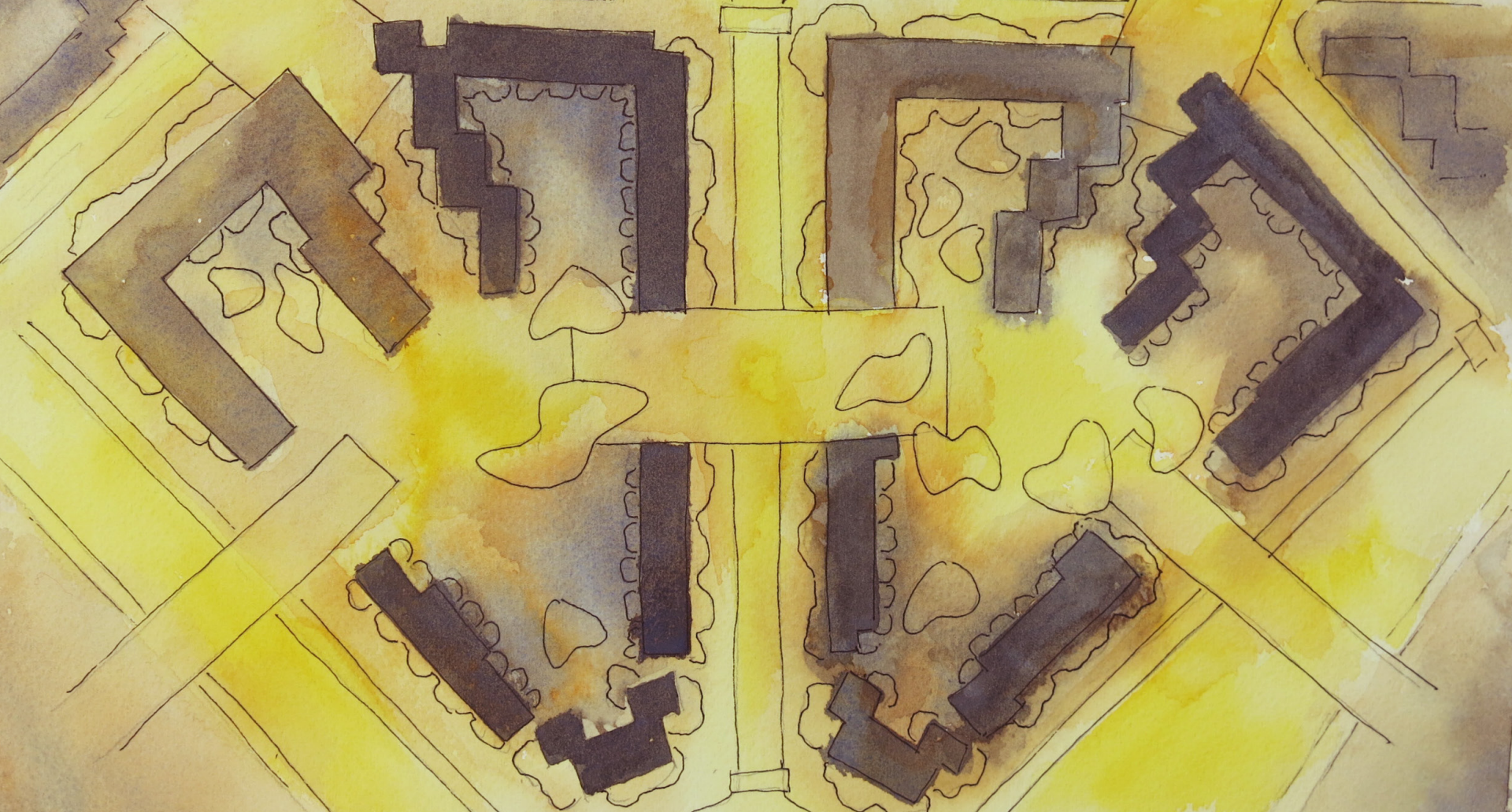


Figure 4.29 The gradient represented on site.

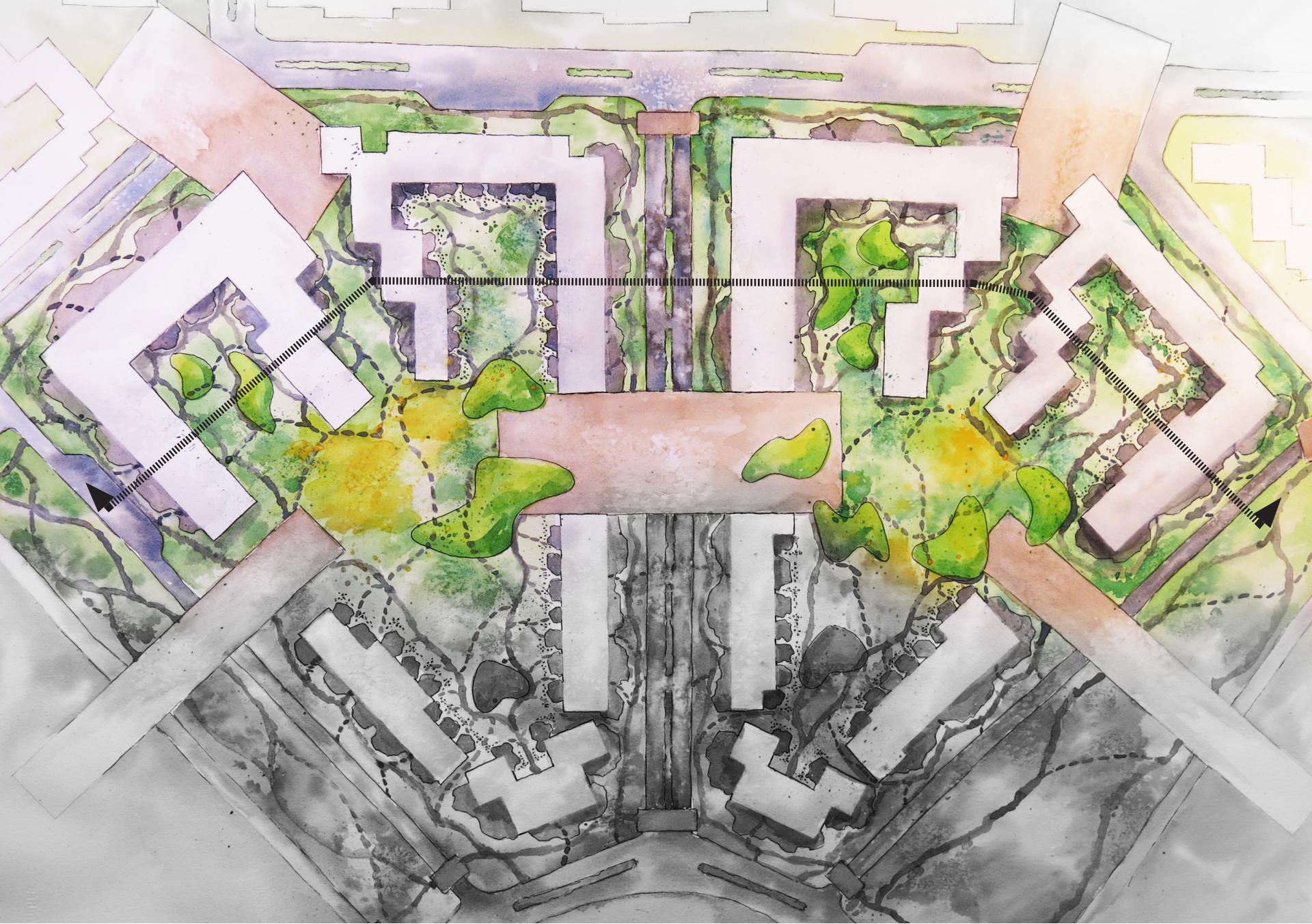


Figure 4.30 Section line: long section



Figure 4.31 Long section alternating through new apartment buildings and original garden apartment buildings.

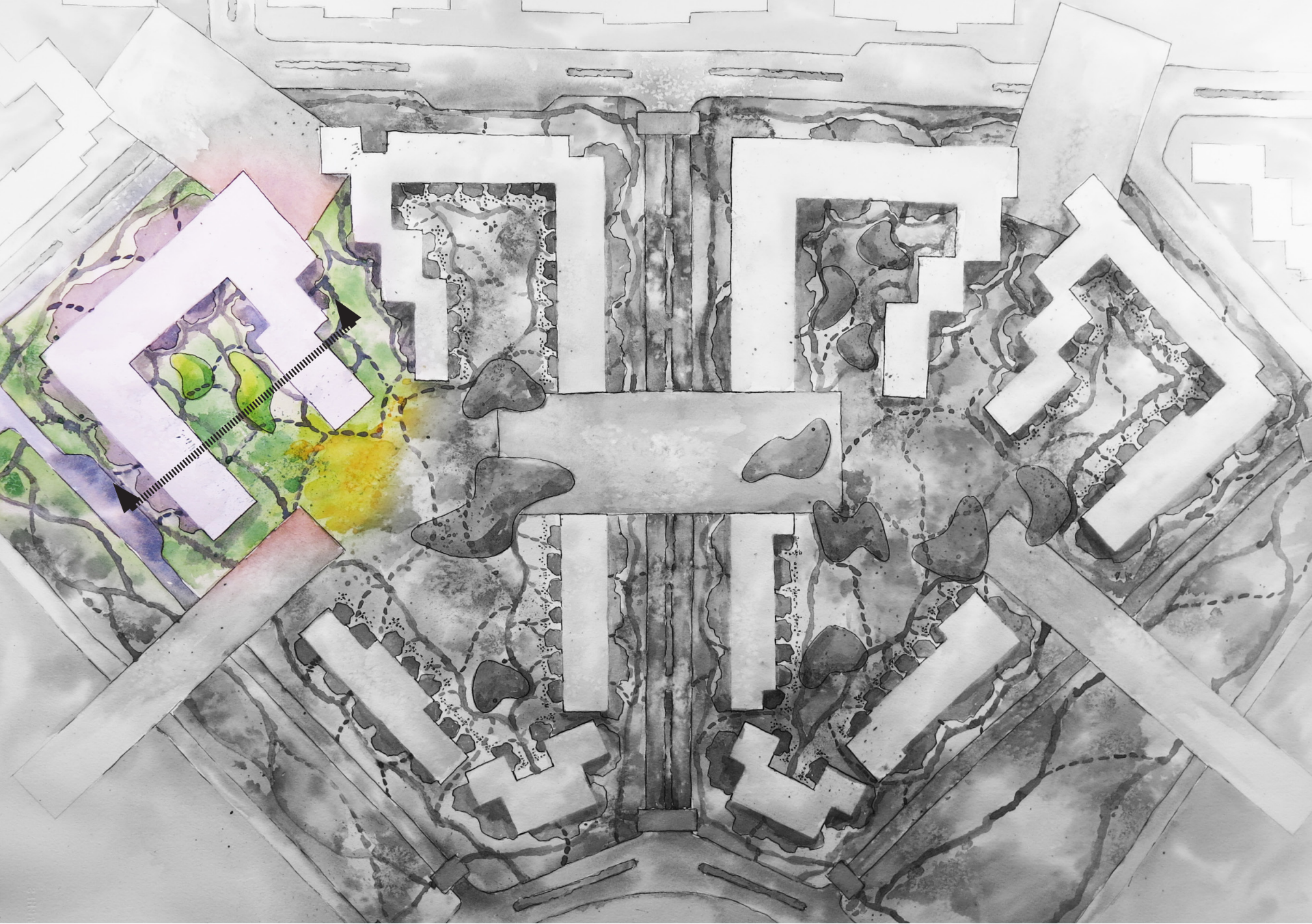


Figure 4.32 Section line through new mid-rise apartments.



Figure 4.33 Section: new mid-rise apartments.



Figure 4.34 Perspective looking at community garden and dynamic drift planting within mid-rise apartment courtyard.



Figure 4.35 Perspective: Community garden and dynamic drift planting within mid-rise apartment courtyard.

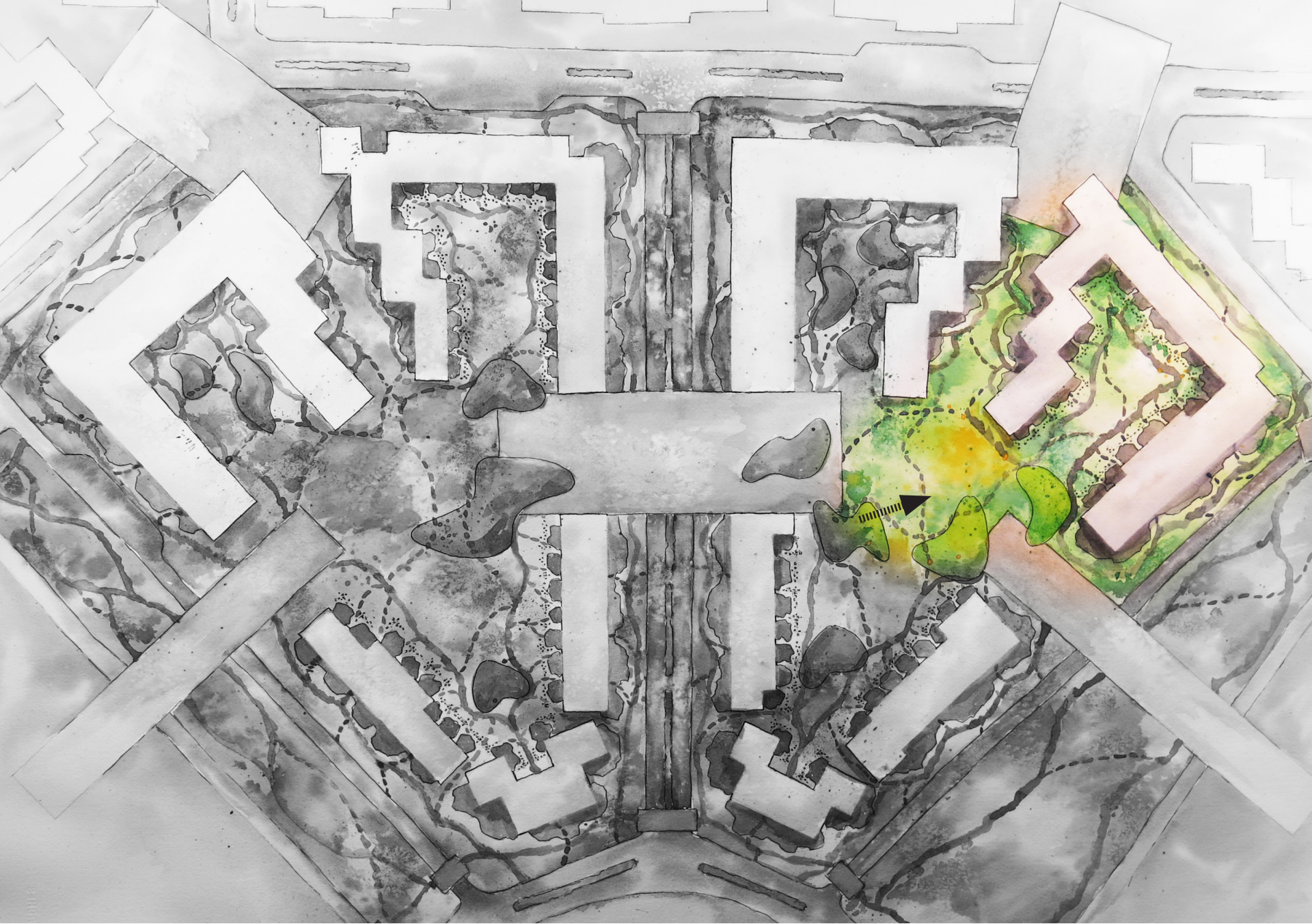


Figure 4.36 Perspective looking at existing garden apartments with proposed landscape.



Figure 4.37 Perspective: existing garden apartments with proposed landscape.

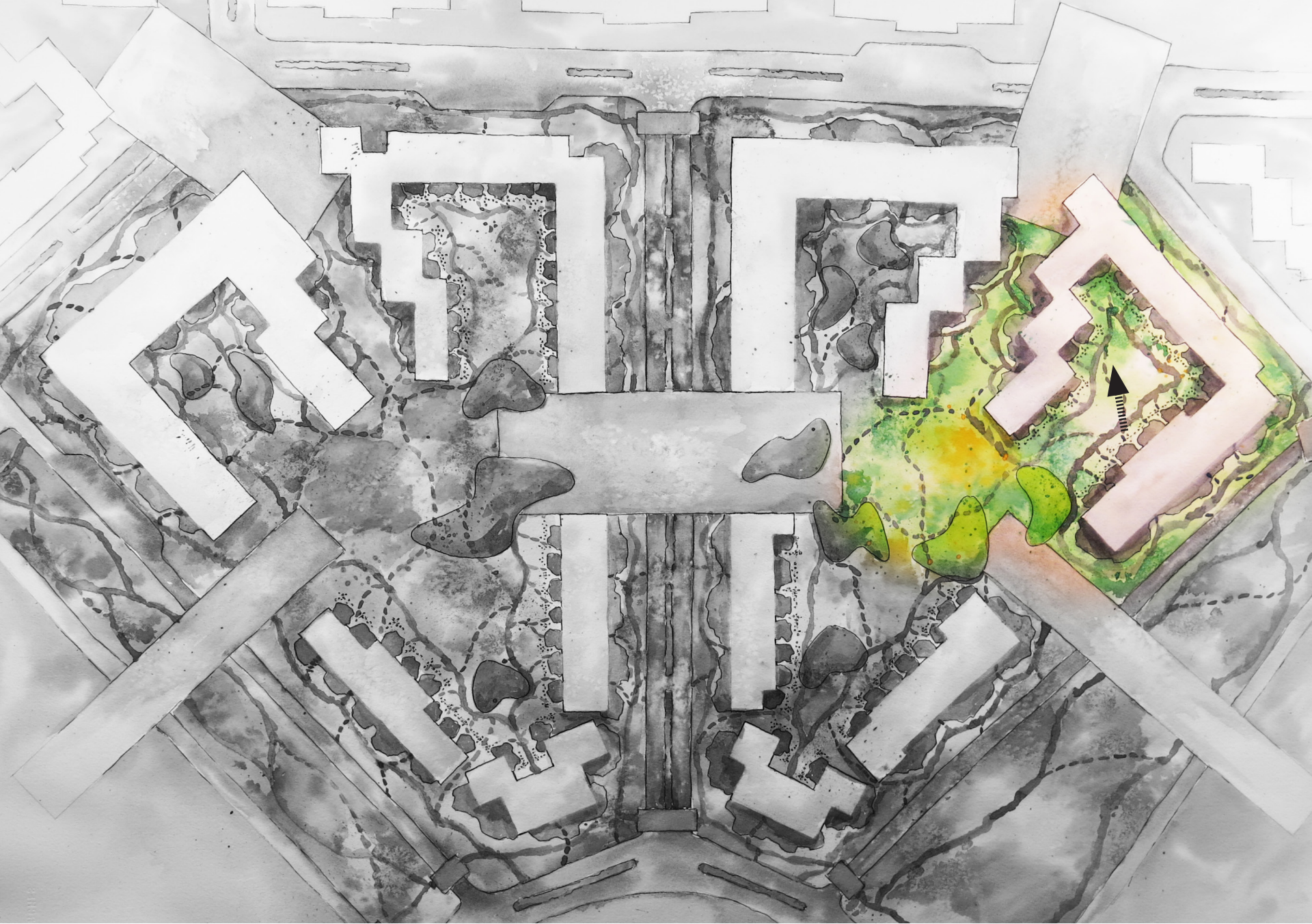


Figure 4.38 Perspective: Dynamic drift planting within updated garden-apartment courtyard.



Figure 4.39 Perspective: Dynamic drift planting within updated garden-apartment courtyard.

V. REFLECTION

What is next?

EVALUATION

Design Adaptability

In revisiting my initial research question on how to design a multi-family residential landscape that is adaptable, I provided one answer by interpreting Gilles Clément's one approach—The Planetary Garden, and two theories—The Garden in Movement and The Third Landscape into design strategies that are intended to engage with a gradient of spatial scales, functions, and qualities (Chapter II). These strategies were then expressed through the forms and placements of four design elements that were tested through retrofitting the residential landscape of Parkmerced (Chapter III, IV). By providing a variety of choices both architecturally and spatially, leaving spaces for spontaneous and/or future programming, and maximizing permeable boundaries, the design strategies and elements created a landscape at Parcmerced where adaptability is accomplished in three ways.

First, adaptability is achieved by providing an assortment of landscape typologies created by residential buildings, curvilinear earth mounds, and staggered concrete blocks (Chapter IV). This is a neighborhood where households with diverse demographics, backgrounds, and structures can find a suitable housing type that could fit their needs and lifestyles, including two-story, four- to six-story, and 13-story apartment buildings. Moreover, one could immerse

oneself in an outdoor space of their desire, no matter if it is a patio or balcony for relaxation, an open field to play soccer on, a productive garden to grow fruits and vegetables in, a playground for children, a dog park for pet-owners, or intimate courtyards to stroll through. The proposed Parkmerced landscape is like a small Planetary Garden where micro-habitats are embedded initially in the design and are able to serve various domestic needs.

Moreover, adaptability is expressed through flexibility, namely the flexibility of how a space could be transformed into other configurations for a variety of activities. The dynamic drift plantings, open fields, and permeable crosswalks are the non-programmed spaces—The Third Landscape—of the Parkmerced landscape. For example, the permeable crosswalks connecting the courtyards alert drivers to slow down and enhance pedestrian safety. Occasionally, the permeable crosswalks could be transformed into plazas where community meetings, markets, concerts, or other activities that require leveled and paved areas take place.

Lastly, adaptability is realized by how the design elements—gradient paving patterns and dynamic drift plantings—are anticipating, allowing, and preparing for future change. These design elements, along with the humanistic dimensions at Parkmerced, embodied The Garden in Movement within the landscape. The drift plantings would evolve over time into plant communities that reflect the conditions of the

site at any given moment: its weather, season, climate, and management regime. Moreover, the irregular and dissolving edges of the gradient paving pattern is prepared for any addition, alteration, or signs of wear to the pathways. These changes would naturally blend in and become a part of Parkmerced's landscape narrative.

Trajectory of Parkmerced

The trajectory of Parkmerced proposed by my design recognizes the challenges its landscape is confronted with: worn-out hardscapes, declining vegetation, increasing housing needs, climate change, and evolving demographics and family types, as well constant fluctuation and unpredictability of the cultural, political, and environmental trajectory. Although the Parkmerced Vision Plan responded to most of these challenges, it failed to take into consideration that urban landscapes are as, if not more, dynamic than natural landscapes. Humans are a dominant catalyst that accelerate cultural and natural change in urban areas. The demand, including people's preferences and needs, and environmental conditions, today might not be the same as yesterday. How can we justify that what we have planned this year will still be appropriate for the environmental, cultural, and social climate in thirty years, when the Parkmerced Vision Plan is set to be completed? To recognize this unpredictability, this design retrofit instead redevelops and incorporates design elements that are set out to be modified from the day they are installed in the landscape.

This design anticipates the future and, simultaneously, acknowledges the past. Parkmerced is a legacy of the modernist era, postwar housing developments, and a collective design effort by Leonard Schultze, Thomas Church, and Robert Royston. The unique apartment-courtyard clustered configuration reflected the desire for a suburban-like domestic lifestyle in a scaled-down, multi-family, urban landscape. I see it as a stride towards a living typology of the in-between: it is neither urban nor suburban, and neither private nor public. Instead, it embraces both individuality and community as well as density and opportunity in the neighborhood. Therefore, instead of replacing this configuration with buildings that follows the shape of a block and a gridded roadway layout, I propose to preserve the footprints of the apartments and courtyards, but to also diversify the landscape experience by integrating new buildings and garden spaces to a selected portion of the garden apartments. This could potentially minimize the impact of demolishing and reconstructing a landscape completely.

I argue that the past and the future should not merely be a static condition that we refer to, nor should our designs be replacing or restoring any given state. Instead, the only state should be one that is constantly changing and acknowledges every dynamism that collectively contributes to one present moment, which again, leads to another.

Modernism and Gilles Clément

Reflecting upon the process of applying Clément's theories on a modernist landscape, Parkmerced, I realized that the gradient also spans across time. The modernist era is a precursor and foundation to Clément's one approach and two theories. Let us revisit the six "axioms for a modern landscape" (Treib 1993):

- A denial of historical styles.
- A concern for space rather than pattern, deriving a model from contemporary architecture.
- Landscapes are for people.
- The destruction of the axis.
- Plants are used for their individual qualities as botanical entities and sculpture.
- Integration of house and garden, not "house-and-then-a-garden."

Three of these axioms describe an approach that challenges the traditions of a style, form, and axial-based design. Modernist designers began to use plants as a structural element to create spaces that were meant to be functional and suitable for its societal climate, site conditions, and preferences of the residents. They began to blur the boundaries between buildings and gardens, and advocated for a collaborative working relationship between architects and landscape architects instead of a linear one.

This evolution in designing allowed present scholars and practitioners like Clément to build upon past theories and propose new ways of understanding landscapes. In Clément's one approach and two theories, the importance of style and form completely diminishes. Plants and human maintenance collaboratively create a new definition of beauty that is functional, dynamic, and ever-changing. Modernist designers began to demonstrate an understanding of horticulture and ecology, allowing Clément to further this understanding and propose a symbiotic relationship between humans and nature. Domestic landscapes of the mid-20th century began to engage with the gradient between art and science that could be the foundation for a more integrated and inclusive 21st-century way of living.

THEORY & STRATEGY POTENTIAL

After testing Clément's three core theories of The Garden in Movement, The Planetary Garden, and The Third Landscape through this project, I agree with Clément that his approach is applicable not just to plant management, but has potential for broader implications across various climates, cultures, and scales. However, it is necessary to understand the core messages of Clément's theories before metaphorically interpreting these theories into principles, strategies, and actions on the ground.

Clément urges us to treat the landscape as a whole. This

entails an approach without drawing theoretical boundaries, looking beyond the physical boundaries, and reimagining new interactions between all boundaries. His theories address how to best work with the existing and to anticipate the forthcoming, while allowing spontaneous change to occur. By doing so, one could anticipate a landscape that embraces all its forces and dynamisms, which would in turn, evolve towards its fullest potential. There are limitless ways to apply Clément's theories to enhance the relationship between humans and nature by designing architectural elements and vegetation, and vice versa.

f (climate)= location

This project metaphorically reframes Clément's theories into seven design strategies, which were tested on Parkmerced, a multi-family residential landscape. Four design elements were generated during design application based on Clément's theories and Parkmerced's site conditions, within which climate is one of the most significant forces acting on the site.

San Francisco's mild Mediterranean climate, and a long growing season is ideal for many plant species to flourish. However, its minimal yearly rainfall limits the drift planting palette to vigorous but not aggressive species that require little to no irrigation or are drought tolerant. If these strategies were to be tested on landscapes that are in different climates, one would choose plants that would thrive with low

maintenance within the local climate. However, the speed of plant movement and seasonal change will vary from climate to climate. For example, in a desert climate, plants are dormant and static the majority of the year until a rain event occurs, when many plants spring back to complete their life cycles, making a dramatic yet extremely brief statement. In short, different climates will require different plant palettes and maintenance approaches.

In addition to plant succession, climate also determines the frequency, season, and time of day one could comfortably enjoy the outdoors. In areas with more distinct seasonality, the design of The Garden in Movement could be reflected in the expansion and contraction of the transition zone—the space between indoor and outdoor, between architecture and landscape, and divided by architectural thresholds. For example, the interface of the architecture could be contractible or transformable to respond to the temperature, sun, wind, humidity, and rain fluctuation. This way, the garden has the potential to be extended inwards and the indoor living rooms could be expanded outwards.

f (culture)= landscape type

I selected multi-family residential landscapes for this project because urban dwellers and plant communities in many ways share similar relationships with their landscapes. First, they are both inhabitants of their habitats. In other words, plants "live" and humans "grow" in the landscape. "Habitat"

implies a specific condition—environmental, cultural, social—in which a plant or a person could thrive. To plants, “thriving” means that they are able to take root, grow with vigor, reproduce, and form symbiotic relationships with their surrounding organisms. For humans, “thriving” is a complex status that can only be defined by oneself and what makes him or her “happy.” Secondly, all human and non-human organisms come from an origin. The origin of a plant is the place(s) where it is considered native or endemic, whereas for a person, one’s origin is the birth place of that person or where he or she can identify the most with. Despite this slight differentiation, all organisms come from somewhere, bringing their own backgrounds and qualities as they migrate across the landscape. Lastly, multi-family homes are similar to naturally-occurring plant communities in that everyone shares a living landscape. No one family is completely isolated from another like cultivated potted plants. Families in multi-family homes share communal grounds just as plants in plant beds share a root space.

Based on the strong applicability of Clément’s theories to designing multi-family residential landscapes I am confident in the compatibility of Clément’s theories with residential landscapes with higher density as well as other landscape types. These theories could be further tested on suburban residential landscapes, mixed-used landscapes, commercial landscapes, urban open spaces (which Clément mainly designs for), urban parkways, urban waterfronts,

productive landscapes, cultural landscapes, and restoration sites. Clément’s theories are extremely relevant to a wide range of landscape types, because most landscapes are a manifestation of humans and nature. If humans and nature are on the opposing ends of a gradient, then some landscape types are dominated by humans and in others nature prevails, while others are a mix of both. All landscape types could be situated within this gradient that represents the relationship between humans and nature. Depending on the different levels and purposes of human engagement in the landscape, the design strategies and elements derived from Clément’s theories would vary. For example, the strategy “require private outdoor spaces for each apartment unit” generated through this project would not be directly applicable to landscapes without buildings. If The Third Landscape were to be integrated within cultural landscapes, the strategy could be modified as “require untilled zones prohibited from human physical access while allowing visual access.” By implementing this strategy, natural forces could act freely and “privately” in selected areas that contribute to the ecological succession of the landscape.

f (scale)= discipline

I applied Clément’s theories to the various design stages in this project, including the evaluation of the Parkmerced Vision Plan, site planning, site design, and the generation of four design elements. Although this project mainly focused on site design, there could be significant application across

a gradient of scales. These scales—from the broader to the narrower—include policy making, planning, programming, and site planning, as well as the designing and placement of doors, windows, and walls. If these theories were to be integrated across all scales on one site, they would have the potential to create a well-connected, functional, dynamic, and inclusive place that is embedded in its landscape with the capability of evolving over time. Not only would this approach create an integrated place, it also has a great potential to bridge disciplinary gaps between various disciplines including planners, architects, landscape architects, interior architects, designers, gardeners, and caretakers. As an example, let us consider the paved patio. The landscape architects, along with the interior architects, would determine a material that could bridge the indoors and outdoors, work with the architects on suitable patio locations in relation to the buildings, and discuss with planners how one design element could contribute to the vernacular of the surrounding landscape.

The Garden in Movement reminds us that nothing is static, and it promotes a symbiotic relationship between two opposing forces—humans and landscapes. The Planetary Garden encourages one to challenge the existing boundaries—physical and imaginary—instead of viewing them as a constraint. And the Third Landscape urges us to let go of unneeded human dominance and engage with the in-betweens.

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